Carleton University
School of Computer Science
COMP 3004B: Object-Oriented Software Engineering
Winter 2016

Last updated on January 6th, 2016

Class Schedule

Tuesday and Thursday 10:05-11:25 AT302

Winter Break: Feb 15th to 19th 2016

No tutorials but TAs will hold weekly office hours starting Jan 11th

Instructor Info

Jean-Pierre Corriveau room: 5328 HP
email: jeanpier AT scs.carleton.ca
office hours: Tuesday 1pm-2pm or by email

Course Website **http://people.scs.carleton.ca/~jeanpier/304W16/**

cuLearn will be used for all assignments posting/submissions and for announcements.

All posted course material will be on the course's web page NOT on cuLearn

Compulsory Textbook: Head First Design Patterns

TAs: names, emails, office hours

Howard Needham	howardneedham@cmail.carleton.ca	Mon/Fri	9-10
Michael Hum	MichaelHum@cmail.carleton.ca	Wed	12:30-2:30
Andrei Juc	AndreiJuc@cmail.carleton.ca	Fri	10:30-12:30
Matthew Preston	MatthewPreston@cmail.carleton.ca	Mon	11:30-13:30

Short Course Description

This course teaches an agile yet **model-driven** approach to object-oriented software development. That is, we will learn how to develop models that are useful in the development of OO code from a scenario-oriented viewpoint. We will also learn how to write code using design patterns. And, most importantly, following the ideas of test driven development (TDD), we will learn how to write code that is easy to test.

Topics Covered

Among topics, we will cover: TDD and the agile manifesto, SCRUM, a subset of the Unified Modeling Language (UML 2.0), scenario graphs and some of the design patterns of Gamma et al.. Time permitting, we will also discuss: use case maps, traceability, design by contracts, death march projects, and computer ethics.

Learning Objectives

- Know the essentials of UML 2.0, especially with respect to scenario modeling
- Understand a representative subset of the Gang of Four design patterns (as covered in the textbook)
- Understand the difficulties of a waterfall approach to software development and why incremental and agile development processes such as SCRUM are better
- Understand the basic ideas of TDD and SCRUM and practice them in the context of the assignments. More specifically, one of the key aspects of this course is to gain experience in **team-based development**. Another fundamental goal of this course to learn to deliver software that can be objectively and automatically evaluated (through the creation of a test suite and its execution within a test framework that can automatically report on the success or failure of each individual test case.)

Prerequisites

The student is assumed to have a strong background in object-oriented programming, as provided by COMP 1406 and COMP 2404. Also, the student is assumed is to have been introduced to basic **networking** in COMP 2401 and to the MVC pattern in COMP2404. 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:

1) First **Individual** Assignment 15% due January 25th 8AM

This assignment will require you to program a small network text-based game.

2) *Team* Project: 55% (multiple deliverables over 2 iterations)

- ➔ The instructor will create all teams and will announce them before the team project starts. Students can submit their suggestions for teams of 3 members by email to the instructor BEFORE January 25th.
- ➔ Once the project starts, all team 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 cuLearn. Failure to do so will be penalized for each missing submission. **Each student should reserve approximately 9 hours or more per week for this course.**
- ➔ 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 each of the two iterations of the project. Also, there will be weekly peer evaluation. Details on how this works will be explained in the first lecture.

3) Open-book final exam: 30% TBA by the Scheduling Office

NOTES:

1) All assignments are to be done in Java/Eclipse. By default, that is, unless stated explicitly in the requirements, all deliverables of this course are to work on the machines of the senior undergraduate lab of SCS.
2) The deadline for the individual assignment and for each of the 2 iterations is firm: **extensions are not possible**, as they would affect later deliverables. Consequently, late submissions will **not** be accepted and will automatically receive a mark of 0. The first assignment is due Jan 25th, the first iteration, March 7th, and the second iteration April 8th. Demos will be scheduled on April 9th and/or 10th for the second iteration. Demos for the first iteration **may** be scheduled for March 7th.
3) The team project MUST ideally be done in a group of 3 members. No groups of 4 or more are allowed. In establishing the teams, the instructor will try to avoid or at least minimize teams of 2 students. Such teams, should there be any, will have the same requirements and expectations as for groups of 3.
4) The project is entirely feasible by a single individual but a team of 1 will not be authorized a priori as it defeats one of the learning objectives of this course (namely learning team work). However, should you not sufficiently contribute on a regular basis to your team's work (as observed through peer evaluations or missing weekly logs or logs denoting an insufficient contribution), you will have to continue the project by yourself.
5) You will have to produce and submit a video illustrating the interface of your final project. Details will be given later.
6) Should illness (or *exceptional* circumstances approved by the Faculty) prevent you from submitting on time the first assignment or any of your weekly team logs and contributions, you must email me a medical certificate within 3 days of the missed deadline. Failure to do so, as well as prolonged illness/absence will likely require that you work by yourself, with updated requirements for both you and your affected teammates.
7) There will be NO supplemental or grade raising exam in this course.
8) No mark can be substituted for another.
9) You MUST pass the team project AND the final exam to pass the course.
10) The project requirements for each iteration will define ***what is minimally expected*** to pass the iteration, as well as additional functionality that is expected to obtain a B+ or an A-. Marking of the assignments will be partially relative to the other teams:

    To get an A, you must provide exceed the requirements given for a B+/A-.
    To get an A+, you must dazzle us!
11) Collaboration on team projects is restricted to members of the same team. Inter-team collaboration is strictly disallowed. Any form of plagiarism for the assignment or project will be reported to the Faculty.
12) Please be aware that while a lot of material will be posted to the course's web page, the final exam will address specific points covered in class. It is therefore expected students will not only attend lectures but also bring *and annotate* the material posted for each lecture.

Student Academic Integrity Policy

Every student should be familiar with the Carleton University student academic integrity policy. A student found violating academic integrity standards may be awarded penalties that range from a reprimand to receiving a grade of F and even being expelled from the program or University. Some examples of offences are: Plagiarism and Unauthorized Collaboration. The Academic Integrity Policy (Apr. 26, 2006) can be found at:
http://carleton.ca/studentaffairs/academic-integrity/

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: write to me 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:
http://carleton.ca/equity/accommodation/

Religious obligation: write to me 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 also visit the Equity Services website mentioned above.

Students with disabilities requiring academic accommodations in this course must register with the Paul Menton Centre for Students with Disabilities (PMC) for a formal evaluation of disability-related needs. Documented disabilities could include but are not limited to mobility/physical impairments, specific Learning Disabilities (LD), psychiatric/psychological disabilities, sensory disabilities, Attention Deficit Hyperactivity Disorder (ADHD), and chronic medical conditions. Registered PMC students are required to contact the PMC, 613-520-6608, every term to ensure that I receive your Letter of Accommodation, no later than two weeks before the first assignment is due or the first in-class test/midterm requiring accommodations. If you only require accommodations for your formally scheduled exam(s) in this course, please submit your request for accommodations to PMC by the last official day to withdraw from classes in each term. For more details visit the PMC website: http://www1.carleton.ca/pmc/

Science Student Success Centre (SSSC)

Who are they? 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.
Their mentors can help you customize an individual study plan which includes weekly and semester work or study schedules, and they 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 1152 Herzberg Laboratories or visit at www.carleton.ca/science/sssc. They can help you succeed!