Carleton University School of Computer Science

COMP 3004 – Object-Oriented Software Engineering

Course Outline -- Fall 2015

Final version

Last modified: Monday, August-31-15

Class Schedule

Classroom:	TBA
Class times:	Mon. and Wed. 14:30 – 16:00
Course web site:	cuLearn

Instructor Information

Instructor	Office	Telephone	Email	Office Hours
Dr. Christine Laurendeau	5376 HP	613-520-2600 x1253	christine.laurendeau@carleton.ca	posted on cuLearn

Teaching Assistants

Detailed TA information can be found in cuLearn.

Course Description

Theory and development software systems. This course will discuss computer ethics. Possible topics include: software development processes, requirement specification, class and scenario modeling, state modeling, 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
  - Software engineering at a glance
  - Team project (team organization, project description)
  - UML notation
- Software Development Life Cycle
  - Requirements analysis (requirement specification, traceability, scenarios, use cases, functional&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 (planning, organizing, risk management)
  - Software life cycle models (activity-centered, entity-centered)
  - Configuration management (change management, version management, system building, release management)
- Professional Ethics (covered as a series of class discussions)
  - Professionalism
  - Software engineering code of ethics
  - Case studies

Prerequisites

COMP 2404

Note: Students who are granted equivalencies or transfer credits in lieu of the prerequisite course(s) and students who performed poorly in the prerequisites are responsible for learning all missing background material on their own.

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
Project Phase #1	25 %	Oct. 14 and Nov. 4
Project Phase #2	25 %	Nov. 23 and Dec. 7
Midterm Exam	15 %	Oct. 21
Final exam	35 %	TBA

Evaluation Notes

- This course involves four (4) project deliverables, organized into two phases. In order to pass the course, students must obtain a passing grade for each phase, **and** a passing grade on the final exam.
- All deliverable and midterm 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.
- There will be no extra credit available in this course.
- Grade grubbing will not be tolerated.

Important Dates

- Design reviews of Phase #1 will take place in class on Nov. 9, Nov. 11 and Nov. 16. Each team is required to present their design when they are called upon, with every member of the team required to present for an equal amount of time.
- Demo Day will take place on Dec. 8, when every team will demonstrate their working prototype. Every team member must attend the demo in order to be assessed on their share of the work.

Course Material

- All concepts covered in class are part of the course material, including the course notes and annotations, the 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* for pedagogical or technical reasons, 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 course notes, in-class exercises, sample project documents, lecture recordings, project and deliverable descriptions, marking schemes, tests, exams, and test/exam solutions) remain the *intellectual property* of the instructor. They are intended for the personal and non-transferable use of students registered in the course. Reposting, reproduction and/or distribution of any course materials, in part or in whole, without the written consent of the instructor, is illegal and **strictly prohibited**.

Project Deliverables

- There will be four (4) project deliverables in this course, and the requirements will be posted on cuLearn.
- Additional information and requirement clarifications will be posted in the deliverable discussion forums on cuLearn. Students are responsible for following all instructions posted in these forums.
- **All deliverables are mandatory**. Failure by a team to submit a deliverable, or failure by a team member to contribute to a deliverable, will result in an automatic "F" in the course.
- Every team member must contribute equally to each deliverable. Students who contribute less than their equal share will have their individual mark reduced based on their contribution.
- Every team member is expected to work on the project for a minimum of nine (9) hours every week.
- Every team will meet at least once a week and submit weekly status reports, indicating the amount and distribution of work completed. Late or missing weekly reports will result in deductions on the next deliverable.
- Any team member who misses two (2) or more team meetings will be removed from the team.
- Programming deliverables must be completed in the programming environment (Virtual Machine) provided.
- All deliverables are to be submitted on cuLearn, before the due date and time. Do not email deliverables to TAs or to the instructor. **LATE DELIVERABLES WILL NOT BE ACCEPTED FOR ANY REASON**.

Collaboration Policy

Collaboration on the project is restricted to members of the same team, which will consist of no more than four (4) students. Inter-team collaboration is **strictly** disallowed and will be reported to the Dean of Science as an instructional offense. While the instructor may be of some assistance in the formation of teams, it is ultimately the responsibility of each student to either create a team or find an existing one to join. The instructor retains the exclusive right to dissolve teams and/or reorganize team membership at her discretion, where doing so best suits the academic objectives of the course.

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.
- Students are expected to respond to emails within 24 hours on weekdays.
- All project and deliverable related questions must be posted on cuLearn.
- All non-confidential course-related questions must be asked during the lectures or posted on cuLearn.
- Students are expected to ask all **other** questions in person during the instructor's office hours.
- The in-class time immediately before and after lectures is **not** considered office hours, as the instructor has other responsibilities and cannot give students undivided attention. Students with questions at those times will be asked to see the instructor during office hours.
- Students are expected to make judicious use of email when contacting the instructor. Most questions can be posted on cuLearn. Emails that are discourteous or disrespectful, or that in any other way contravene the Student Rights and Responsibilities Policy, will not be answered. Others can expect a reply within 24 hours on weekdays.
- The TAs are the first point of contact for students requiring help with programming deliverables.
- The instructor is the first contact for students requiring help with the course material, issues within the teams, or academic advising.
- 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 SCS technical support team, and **not** by the TAs or the instructor.
- The instructor's office hours are in effect from Sept. 2 to Dec. 7, excluding the week of the Fall Break.

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.

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) at http://www2.carleton.ca/pmc/new-and-current-students/datesand-deadlines/

Religious Obligation

Write to the 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: http://www2.carleton.ca/equity/

Pregnancy Obligation

Write to the 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: http://www2.carleton.ca/equity/

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://www.carleton.ca/registrar/forms