

## **Course Outline**

### **SYSC 4806 Software Engineering Lab**

**Lecturer**

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**Calendar Description:**

- Applying the full spectrum of engineering and programming knowledge acquired in the program through team projects in the laboratory. Practice in doing presentations and reviews. Lectures will discuss software engineering issues as they relate to the projects, from a mature point of view. Prerequisite(s): SYSC 4120 and fourth-year status in Software Engineering.

**Course Description and Objectives**

The course develops professional level expertise in selected, important areas of the field by applying, honing, integrating and extending previously acquired knowledge, in team projects in the laboratory. Specifically, this term the course will focus on agile methodologies for the development and operation of web applications.

The course objectives are:

- To develop team working skills that are much needed in the software industry. Team work has been recognized as an important aspect of today's engineering education and is, as such, explicitly specified in the accreditation requirements for our program.
- To develop the students' communication skills through presentations on theme topics.
- To gain experience with a Web Application Framework widely used in industry.
- To gain experience with Agile engineering practices to efficiently deploy web applications to remote servers or modern cloud infrastructures.

**Prerequisite**

Students who have not satisfied the prerequisite must either: a) withdraw from the course, b) submit a prerequisite waiver online at [www.sce.carleton.ca/ughelp](http://www.sce.carleton.ca/ughelp), or c) will be deregistered from the course after the last day to register.

**Textbook**

“Engineering Software as a Service: An Agile Approach Using Cloud Computing”, by Armando Fox and David Patterson. Book’s official web site: <http://www.saasbook.info/>  
The Kindle eBook format is inexpensive and recommended.

Course notes and a bibliography of reference books that are relevant to this course will be posted on the course Web site.

**Approach**

Lecture periods will be devoted to new knowledge required for the selected areas, to project related issues, and to student presentations. We will also have guest lectures by industry experts, on topics relevant to the course.

During the lab sessions, the students will learn how to use a web framework and selected engineering tools (e.g. deployment tools), during the first few weeks (tentatively: 5 weeks), then they will work on their projects for 7 weeks, in order to achieve 3 two-week iterations. Each team will be expected to demonstrate the project milestones with the TA.

It is important to establish the teams as soon as possible in order to be able to schedule demo times and student presentations.

**Grading Scheme**

- reading comprehension quizzes: 10% of the final mark;
- lab exercises: 10% of the final mark;
- student presentation: 10% of the final grade
- three project milestones: 30% of the final grade
- closed-book final exam: 40%.

To pass the course, an appropriate overall mark (D- or higher) must be obtained and a passing mark (D- or higher) must be obtained at the final exam.

**Project**

A major component of the course is a project that will lead you through the process of building a reasonably complex system. This will be a group project. Each team member must participate in all aspects of the project: design, coding, testing and debugging, etc.

The project will be divided into several milestones, which will be evaluated and graded separately. Students are encouraged to discuss design issues with their colleagues; however, teams are expected to write their own programs. There is a fine line between cooperating with your colleagues (discussing problems and ideas) and copying program code (plagiarism).

**Exam**

A closed-book final exam will be held during the University's April examination period.

The exam is for evaluation purposes only and will not be returned to the students.

Students who miss the final exam may be granted permission to write a deferred examination (see the Undergraduate Calendar for regulations on deferred exams). These students have additional months to study and a less crowded examination schedule compared to their colleagues who write the final exam in April. As such, it is only fair to expect substantially better performance from these students on the deferred examination than on the final exam.

**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: 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 detail visit the Equity Services website

[http://www.carleton.ca/equity/accommodation/student\\_guide.htm](http://www.carleton.ca/equity/accommodation/student_guide.htm)

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 detail visit the Equity Services website

[http://www.carleton.ca/equity/accommodation/student\\_guide.htm](http://www.carleton.ca/equity/accommodation/student_guide.htm)

Students with disabilities requiring academic accommodations

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](mailto: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). You can visit the Equity Services website to view the policies and to obtain more detailed information on academic accommodation at <http://carleton.ca/equity/accommodation>

### **Plagiarism**

Plagiarism (copying and handing in for credit someone else's work) is a serious instructional offense that will not be tolerated. Please refer to the section on instructional offenses in the Undergraduate Calendar for additional information.

### **Health and safety**

<http://www.sce.carleton.ca/courses/health-and-safety.pdf>