Carleton University
Department of Systems and Computer Engineering
SYSC4106 Software Product Management Winter 2018

Tentative Course Outline

Professor: Samuel A. Ajila, PhD, P.Eng., SMIEEE
Office Hour: Monday 2:00 to 3:00 pm

Office: MC 7038

Teaching Assistants: TBD

Lecture: Tuesdays – 6:05 pm to 8:55 pm in Steacie Building (SC) 103
Labs: Fridays – 8:35 am to 11:25 am in Loeb Building (LA) C264 (Note that Lab attendance is compulsory)

Course Web page: A cuLearn page will be maintained for the course

Course Calendar Description, Objectives, and Intended Outcomes:

Stages of the life cycle of software products and their implications for architecture definition, requirements specification, variety, target market segmentation, adoption, roll-out plans, documentation, maintenance, skills, building prototypes, testing, feature prioritization, quality and tools infrastructures.

Lectures three hours a week, laboratory/problem analysis three hours a week

Prerequisite(s): SYSC 3100 or SYSC 3020 or SYSC 3120 (SYSC 3020 and SYSC 3120 can be taken concurrently) or COMP 3004.

Students who have not satisfied the prerequisite for this course must either (a) withdraw from the course, (b) submit a prerequisite waiver through to the associate deans’ office (FED or Faculty of Science) or (c) will be deregistered from the course after the last day to register for courses in winter term.

The objective of this course is to examine the theory, processes, methods, and tools for software project management. The perspective emphasized is that of a Software Engineer and/or Computer Scientist in the role of a project manager responsible for planning and controlling the activities that result in the delivery of software products.

What is learned from this course, are topics that are fundamental for managing the ever-increasing complexity of software projects? These topics include:

- Characteristics of Software Projects
- Life Cycle Models and Project Management
- Planning and Scheduling
- Risk Analysis and Management
- Software Measurement
- Measurement-driven Improvement
- Process-driven Improvement
- Project Monitoring & Quality Control
- Software Size and Cost Estimates

This course is designed to build capacity and knowledge in the management of large, complex, and changing software systems. Successful completion of the course will enable participants to better manage: (i) the synchronization among the various technical and managerial activities that lead to the delivery of software and (ii) the interactions of the development team with other stakeholders such as clients, product planning, and marketing.
The intended outcomes are (i) ability to discuss the specific problems of software product management and the reasons for failure, and the need for different approaches; (ii) able to apply basic techniques of cost estimation, risk analysis, and project planning techniques for software development projects; (iii) familiarity with the principles and practice of quality management for software projects; (iv) awareness of the problems associated with managing human resources in software projects; and (v) familiarity with the management implications of using different software processes and the need for software process improvement.

Textbooks

Grading Scheme
A maximum of 100 marks will be available. The division is as follows:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Labs and Group Project [labs and project are NOT deferrable]</td>
<td>35%</td>
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<tr>
<td>TWO (2) Quizzes [5% each and are NOT deferrable]</td>
<td>10%</td>
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<tr>
<td>1st Term Exam   (Feb 16, 2018)</td>
<td>25%</td>
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<tr>
<td>2nd Term Exam   (March 23, 2018)</td>
<td>30%</td>
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1. **Lab dates:** Jan.19; 26; Feb. 2; 9; 16; March 2; 9; 16; 23; April 6 and April 11 (all in 2018).
2. **Quiz dates:** Jan. 26 and March 9. Quiz duration is roughly 15 to 20 minutes and will be organized at some point during the lab. Note that there will be lab before/after the quiz.
3. **1st Term Exam = Feb 16, 2018** (Please mark this date in your calendar)
4. **2nd Term Exam = March 23, 2018** (Please mark this date in your calendar)
5. **Project presentation dates:** March 27; April 3; April 6; April 10; and April 11 (Note that April 11 is a Wednesday with Friday scheduling!)
6. Note that late hand-in of **labs/project assignments** will be accepted with the penalty as follows:
a. Late lab or project assignment will be graded according to the following policy: a 20% penalty per day with a maximum of two late days after which the grade of 0 is assigned. The penalty starts 5 minutes after due time.

7. Absence from scheduled lab will be graded zero (0). There is no deferred lab. There is no deferred quiz since the quizzes will be given during the labs.

8. Note also that the Professor reserved the right to set the quizzes and exams (i.e. term exams or any other exam) to cover all the materials (i.e. lecture notes, books, handouts, teaching, and reference materials) examined and covered in class and during the labs.

2nd Term Exam: Is for evaluation purposes only and will not be returned to the student.

Students who miss the exams may be granted permission to write a deferred examination. Section 2.5 of the Academic Regulations of the University applies in case of deferred final exam.

You may need special arrangements to meet your academic obligations during the term. For an accommodation request the processes are as follows:

Pregnancy obligation and Religious obligation: Visit the Equity Services website http://carleton.ca/equity/accommodation/ and fill the relevant forms for accommodation. Inform me of 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. All academic accommodation requests must be settled at least three weeks before any exam.

Academic Accommodations for Students with Disabilities
The Paul Menton Centre https://carleton.ca/pmc/ 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). Requests made within two weeks will be reviewed on a case-by-case basis. After requesting accommodation from PMC, meet with me to ensure accommodation arrangements are made. Please consult the PMC website (www.carleton.ca/pmc) for the deadline to request accommodations for the formally-scheduled exam (if applicable). All academic accommodation requests must be settled at least three weeks before any exam.

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. Academic dishonesty in any form will not be
tolerated. Students who infringe the Policy may be subjected to one of several penalties including: expulsion; suspension from all studies at Carleton; suspension from full-time studies; and/or a reprimand; a refusal of permission to continue or to register in a specific degree program; academic probation; or a grade of Failure in the course.

**Health and Safety**

Every student should have a copy of our Health and Safety Manual. An electronic version of the manual can be found at [http://www.sce.carleton.ca/courses/health-and-safety.pdf](http://www.sce.carleton.ca/courses/health-and-safety.pdf)

**Tentative Outlines – the outlines are likely to evolve during the term**

**Weeks 1, 2, and 3**
- Introduction to Project Management
- Software Life Cycle
- WBS, Software Planning and Scheduling

**Weeks 4, 5, and 6**
- Risk Analysis and Management
- Software Project Organization
- Software Size Estimation and Reuse

**Weeks 7, 8, and 9**
- Software Effort Estimation
- Software Cost Estimation and Contract Rates
- Software Cost Control and Contract Types

**Weeks 10, 11, and 12**
- Software Process Metrics
- Software Project Teams, Communication, and Intellectual Property
- Project presentations

**Week 13**
- Project Presentations

**Get help early if you are having difficulty with the course content.**

Ways to get help are:
- Ask question in class or during the lab. This is the best way to clear things up.
- Ask professor during office hours.
- Note that Email is not the best medium for technical questions! Questions submitted by Email will be answered at the beginning of the next class.