

**Carleton University**  
**Department of Systems and Computer Engineering**  
***SYSC4106 Software Product Management Winter 2012***

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**Course Outline**

**Instructor: Samuel A. Ajila, PhD, P.Eng**

**[Office: MC 7038, Phone: 2673] (Office Hours: Tues-11:30 am to 1:30 pm)**

**Teaching Assistant: Li Linhua - Labs (Tuesdays 11:35 am to 1:25 pm)**

**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 two hours a week*

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
- Evolution of Software Economics
- Planning & Risk 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.

**Prerequisite**

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.

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**Textbooks**

1. Bob Hughes and Mike Cotterell, Software Project management, 5<sup>th</sup> edition, ISBN 9780077122 , 2009, McGraw Hill (**Recommended**)
2. Bernd Bruegge and Allen H. Dutoit, Object-Oriented Software Engineering: Using UML, Patterns, and Java, 3rd edition, Prentice-Hall, 2010, ISBN-10: 0136061257; ISBN-13: 97801361250, (**Referenced**)
3. Roger S. Pressman, Software Engineering - a Practitioner's Approach, 7th edition, ISBN 9780071267823, 2010, McGraw-Hill (**Referenced**)
4. Robert T. Futrell et al., Quality Software Project Management, Software Quality Institute Series, 2002 Prentice Hall PTR, ISBN 0-13-091297-2 (**Referenced**)

**Grading Scheme**

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

<b>FOUR (4) Un-Scheduled Quizzes</b>	<b>10%</b>
<b>Assignments/Project [Assignments/project are NOT deferrable]</b>	<b>15%</b>
<b>Mid-term exam (60 minutes closed book exam) [Feb. 28<sup>th</sup>, 2012]</b>	<b>20%</b>
<b>Final Exam (2 hours closed book exam)</b>	<b>55%</b>

The mid-term exam will be held during regular class hours, on Tuesday, **February 28, 2011**. You should plan [now] to be there. **There is no differed mid-term exam.** For students who miss the midterm due to illness, **the midterm exam weight (i.e. marks) may be added to the final exam** if there is sufficient evidence (e.g. medical report) that the student is actually sick.

Note that late hand-in of **assignments/project** will be accepted with the penalty as follows:

1. 1.0% a day for weekdays
2. 0.65% a day for weekends and holidays

**Final Exam:** *Is for evaluation purposes only and will not be returned to the student.*

**To pass the course** (in addition to obtaining an appropriate overall mark), projects must be carried out and completed, and the final exam must be passed (50% or more). **Failing to pass the final exam will result in an F grade for the course.**

**Students who miss the final exam may be granted permission to write a deferred examination (see the online Undergraduate Calendar for regulations on deferred exams).**

**Students with Disabilities:** Students with disabilities requiring academic accommodations in this course are encouraged to contact a coordinator at the Paul Menton Centre for Students with Disabilities to complete the necessary letters of accommodation. After registering with the PMC, make an appointment to meet and discuss your needs with me at least two weeks prior to the

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final exam. This is necessary in order to ensure sufficient time to make the necessary arrangements. Please note the following deadlines for submitting completed forms to the Paul Menton Centre: **March 7, 2012** for the Winter Term.

**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 subject 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>"

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

**Weeks 1, 2, and 3**

- Introduction to Project Management
- Software Life Cycle
- Software Project Organization

**Weeks 4, 5, 6 and 7**

- Software Project Planning and Scheduling
- Risk Analysis and Management
- Estimating Software Size

**Weeks 8 and 9**

- Software Configuration Management
- Mid-term Exam - Tuesday, February 28<sup>th</sup> 2012 @ 2:30 pm in class**
- Estimating Software Cost and Managing Contracts

**Weeks 10, 11 & 12**

- Software Process Metrics – Measuring Software Process & Quality Assurance
- Software Project Teams and Team Communication

**Week 13**

- Review & Projects presentation