# SIMON FRASER UNIVERSITY
# Senate Committee for Undergraduate Studies
## NEW COURSE PROPOSAL

Course Number: CMPT 276-3

Course Title: Introduction to Software Engineering
Short Course Title: Intro Software Engineering

Course vector: 3 lecture, 2 lab

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**Course Description (for Calendar). Attach a course outline to this proposal.**

An overview of various techniques used for software development and software project management. Major tasks and phases in modern software development, including requirements, analysis, documentation, design, implementation, testing, installation, support, and maintenance. Project management issues are also introduced.

Prerequisite: CMPT 225, MACM 101. Students who have taken CMPT 275 may not take this course for further credit.

Corequisite: none

Course(s) to be dropped if this course is approved: none

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**Rationale for Introduction of this Course:**

This course will be required in the proposed Software Systems program for the Surrey campus. This course is to provide students with a glimpse of the various
topics to be covered in depth during later courses in the software engineering portion of the Software Systems curriculum. This course is similar to CMPT 275, a required course in the Computing Science curriculum, but is distinguished by this
being a true introduction whereas CMPT 275 must act as a final and only software
engineering course for many students. Hence, this course can be lighter and warrants only three credits to CMPT 275's four credits. In particular, CMPT 275 is centred on a substantial group term project, where this course will be based on homework assignments.

**Scheduling and Registration Information:**

Indicate effective **semester/year** course would be first offered and planned **frequency** of offering thereafter.

Spring 2009, initially offered twice annually in Surrey

Waiver required: no

Will this be a required or elective course in the curriculum?

Required in the Software Systems program.

What is the probable enrolment when offered?

40 students.

Which of your present CFL faculty have the expertise to offer this course?

Toby Donaldson, Harinder Khangura, John Edgar, Fred Popowich, Anne Lavergne, Uwe Glaesser, Dirk Beyer

Are there any proposed student fees associated with this course other than tuition fees? (if so, attach mandatory supplementary fee approval form)

no

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**Resource Implications:**

**Note: Senate has approved (S.93-11) that no new course should be approved by Senate until funding has been committed for necessary library materials. Each new course proposal must be accompanied by a library report and, if appropriate, confirmation that funding arrangements have been addressed.**

Campus where course will be taught:

Surrey.

Library report status _____

Provide details on how existing instructional resources will be redistributed to accommodate this new course. For instance, will another course be eliminated or will the frequency of offering of other courses be reduced; are there changes in pedagogical style or class sizes that allow for this additional course offering?

See attached Software Systems Curriculum document.

Any outstanding resource issues to be addressed prior to implementation: space, laboratory equipment, etc.

See attached Software Systems Curriculum document.

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**Approvals**

1. **Departmental approval** indicates that the Department has approved the content of the course, and has consulted with other Departments and Faculties regarding proposed course content and overlap issues.

   _____
   Chair, Dept./School Date

   _____
   Chair, Faculty Curriculum Committee Date

2. **Faculty approval** indicates that all the necessary course content and overlap concerns have been resolved, and that the Faculty/Department commits to providing the required Library funds.

_____ Date: _____
Dean or Designate

*List* which other Departments and Faculties have been consulted regarding the proposed course content including overlap issues. *Attach documentary evidence of responses.*

_____
_____
_____
_____

**Other Faculties approval** indicates that the Dean(s) or designate of other Faculties affected by the proposed new course support(s) the approval of the new course.

_____ Date: _____

_____ Date: _____

**3. SCUS approval** indicates that the course has been approved for implementation subject, where appropriate, to financial issues being addressed.

Course approved by SCUS (Chair of SCUS)

_____ Date: _____

**Approval is signified by date and appropriate signature.**

# Proposed CMPT 276 Course Outline

This course is an overview of various techniques used for software development and software project management. Students are introduced to elements of the major tasks and phases in modern software development, including requirements gathering, systems analysis, documentation, software design, implementation, testing, installation, support, and maintenance. Project management issues, such as software-project planning, quality assurance, configuration management, and personnel management are also introduced. Students will be evaluated on examinations as well as group and individual homework assignments.

Topics:
- Process management: software life cycle, software development process models
- People management: team work, social skills, cost estimation, process improvement
- Requirements: system analysis and modeling, requirements specification
- Design, high level: architectural, module interface, user interface, design patterns
- Design, low level: detailed design of modules/classes, refactoring
- Implementation: programming paradigms, coding styles, code review, pair programming
- Quality assurance: unit and integration testing, static program analysis, design structure validation, software metrics
- Documentation: user manual, reference manual, integrated help
- Maintenance and support: configuration management, build tools, change management

Grading:
Assignments 50%, midterm exam 15%, final exam 35%

Textbook:
- Software Engineering for Students: A programming Approach, Douglas Bell, Addison-Wesley, 2005

References:
- Software Engineering, Ian Sommerville, Pearson, 2006: 8th edition.
- Software Engineering: A Practitioner's Approach, Roger S. Pressman, McGraw-Hill, 2004: 6th edition.