



COURSE NUMBER _____

COURSE TITLE

LONG — for Calendar/schedule, no more than 100 characters including spaces and punctuation
CMPT 375 Mathematical Foundations of Software Technology

AND

SHORT — for enrollment/transcript, no more than 30 characters including spaces and punctuation
SW Technology Foundations

CREDITS

Indicate number of credits for: Lecture 3 Seminar _____ Tutorial _____ Lab _____

COURSE DESCRIPTION (FOR CALENDAR). 50-60 WORDS MAXIMUM. ATTACH A COURSE OUTLINE TO THIS PROPOSAL.

This course explores abstraction principles and formalization techniques for modeling software systems in early design phases. Design is a creative activity calling for abstract models that facilitate reasoning about the key system attributes to ensure that these attributes are properly established prior to actually building a system. The focus is on specification and validation techniques rather than on formal verification.

PREREQUISITE

- MACM 101
- MACM 201
- CMPT 275 recommended

COREQUISITE

SPECIAL INSTRUCTIONS

That is, does this course replicate the content of a previously-approved course to such an extent that students should not receive credit for both courses.? If so, this should be **noted in the prerequisite**.

COURSES(S) TO BE DELETED IF THIS COURSE IS APPROVED

NOTE: APPROPRIATE DOCUMENT FOR DELETION MUST BE SUBMITTED TO SCUS

RATIONALE FOR INTRODUCTION OF THIS COURSE

Mathematical foundations of software technology constitute a prerequisite for a firm understanding of the challenges and needs in current and future software system design. Analytical skills building on general abstraction principles and common formalization techniques will enable students to clearly separate semantic aspects from syntactic aspects and to systematically separate high-level aspects of specification, design and validation from low-level aspects related to coding activities (programming, debugging, etc.). The course is meant to become a cornerstone of our Software Engineering program at Burnaby to fill a currently existing gap between CMPT 275 (Software Engineering I) and CMPT 475 (Software Engineering II).



SCHEDULING AND ENROLLMENT INFORMATION

Indicate effective **term and year** course would first be offered and planned **frequency** of offering thereafter:

Spring term 2010 (1101); twice per year on a regular basis

(NOTE: There is a two-term wait for implementation of any new course.)

Indicate if there is a waiver required: YES NO Will this be a required or elective course in the curriculum? Required Elective

What is the probable enrollment when offered? Estimate 20-30

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

Dirk Beyer
Rob Cameron
Uwe Glaesser

Are there any proposed student fees associated with this course other than tuition fees? YES NO
(If yes, attach mandatory supplementary fee approval form.)

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.

Burnaby

Campus where course will be taught _____

Library report status N/A (The textbook is already available in the library. All other reading materials will be provided online.)

Provide details on how existing instructional resources will be redistributed to accommodate this new course. For example, 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?

This course is meant to fill a currently existing gap in the Computing Science UG course offerings at Burnaby and is complementary to the existing courses related to Software Engineering. This course will not affect any other Computing Science courses, neither their frequency nor their content or pedagogy.

List any outstanding resource issues to be addressed prior to implementation: space, laboratory equipment, etc:

None

Articulation agreement reviewed? YES NO Not applicable

OTHER IMPLICATIONS

None



APPROVALS

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

Chair, Department/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/School/Department commits to providing the required Library funds.

Dean or designate Date

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

Engineering Science
Interactive Arts and Technology

Other Faculties approval indicated 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.