

Formal Software Engineering 1 - Course Outline

SWEN 421: 2010 Trimester 1

This document sets out the workload and assessment requirements for SWEN 421. It also provides contact information for staff involved in the course. If the contents of this document are altered during the course, you will be advised of the change by an announcement in lectures and/or on the course web site. A printed copy of this document is held in the School Office.

Objectives

This course introduces a selection of topics, focusing on the use of formal methods in the specification, design and analysis of software. Topics include the formal specification of software systems, proving properties of the specification and the refinement of specifications towards code.

The principal objective of the course is to develop the students' ability to think rigorously about software development and to use mathematical techniques to describe and reason about software systems. By the end of the course, students should be able to:

1. Use mathematical structures such as sets, bags, functions, relations and sequences to formally specify software systems, and to state desired properties of such systems.
2. Use mathematical reasoning to prove desired properties of software models.
3. Refine specifications towards code.
4. Use tools such as CZT for specifying and verifying software systems.

Textbook

There is no text book for the course. Handouts covering the lecture material will be provided for some parts of the course. Pointers to additional material, in the VUW library and on the Web, will be provided on the course web site.

Lectures, Tutorials, Laboratories, and Practical work

A [schedule](#) of lecture topics, readings, and assignment due dates is available online

SWEN 421 is a Trimester 1 course, with three lectures per week:

- Monday, Tuesday, Friday, all 9.00-9.50am in Easterfield 004.

Assignments and Projects

There will be between 4 and 6 assignments covering a mixture of written work (addressing objectives 1 to 3) and some involving the use of tools such as CZT (addressing objective 4).

Assignments will be accepted up to noon on the day following the deadline, with a 10% penalty. Assignments will only be accepted for marking later than this in exceptional circumstances and by prior arrangement. If you have difficulties in completing the assignments, it is your responsibility to contact the course organiser as early as possible to discuss alternative arrangements.

Marked assignments will normally be returned during lecture.

Bachelor of Engineering students should be aware that copies of their assessed work may be retained for inspection by accreditation panel.

Workload

In order to maintain satisfactory progress in SWEN 421, you should plan to spend an average of at least 10 hours per week on this paper. A plausible and approximate breakdown for these hours would be:

- Lectures: 3 hours
- Readings and lecture preparation: 4 hours
- Assignments: 3 hours

School of Engineering and Computer Science

The School office is located on level three of the Cotton Building ([Cotton 358](#)).

Staff

The course organiser and lecturer for SWEN 421 is [Petra Malik](#). Her contact details are:

- [Petra Malik](#)
- [Cotton 258](#)
- +64 4 463 5820
- Petra.Malik@ecs.vuw.ac.nz

Announcements and Communication

The main means of communication outside of lectures will be the SWEN 421 web area at http://ecs.victoria.ac.nz/Courses/SWEN421_2010T1/. There you will find, among other things, this document, the [lecture schedule](#) and [assignment handouts](#).

Assessment

Your grade for SWEN 421 will be determined based on the following assessment weightings:

Item	Weight
Assignments	40%
Final Examination	60%

Exam

The [timetable for final examinations](#) will be available from the University web site and will be posted on a notice board outside the faculty office. The final examination will be three hours long. No computers, electronic calculators or similar device will be allowed in the final examination. Paper non-English to English dictionaries will be permitted. The examination period for trimester 1 is 11 June - 30 June.

Plagiarism

Working Together and Plagiarism

We encourage you to discuss the principles of the course and assignments with other students, to help and seek help with programming details, problems involving the lab machines. However, any work you hand in must be your own work.

The [School policy on Plagiarism](#) (claiming other people's work as your own) is available from the course home page. Please read it. We will penalise anyone we find plagiarising, whether from students currently doing the course, or from other sources. Students who knowingly allow other students to copy their work may also be penalised. If you have had help from someone else (other than a tutor), it is always safe to state the help that you got. For example, if you had help from someone else in writing a component of your code, it is not plagiarism as long as you state (eg, as a comment in the code) who helped you in writing the method.

Mandatory Requirements

1. at least 40% average in the assignments,
2. at least 40% in the final exam, and
3. at least 50% overall.

Passing SWEN 421

To pass SWEN 421, a student must satisfy mandatory requirements and gain at least a **C** grade overall.

Withdrawal

The last date for withdrawal from SWEN 421 with entitlement to a refund of tuition fees is 12 March 2010. The last date for withdrawal without being regarded as having failed the course is 14 May 2010 -- though later withdrawals may be approved by the Dean in special circumstances.

Rules & Policies

Find key dates, explanations of grades and other useful information at <http://www.victoria.ac.nz/home/study>.

Find out about academic progress and restricted enrolment at <http://www.victoria.ac.nz/home/study/academic-progress>.

The University's statutes and policies are available at <http://www.victoria.ac.nz/home/about/policv>. except qualification

statutes, which are available via the Calendar webpage at <http://www.victoria.ac.nz/home/study/calendar> (See Section C).

Further information about the University's academic processes can be found on the website of the Assistant Vice-Chancellor (Academic) at <http://www.victoria.ac.nz/home/about/avcacademic>

All students are expected to be familiar with the following regulations and policies, which are available from the school web site:

Grievances

Student and Staff Conduct

Meeting the Needs of Students with Disabilities

Student Support

Academic Integrity and Plagiarism

Dates and Deadlines including Withdrawal dates

School Laboratory Hours and Rules

Printing Allocations

Expectations of Students in ECS courses

The School of Engineering and Computer Science strives to anticipate all problems associated with its courses, laboratories and equipment. We hope you will find that your courses meet your expectations of a quality learning experience.

If you think we have overlooked something or would like to make a suggestion feel free to talk to your course organiser or lecturer.
