Formal Software Engineering - Course Outline
SWEN 421: 2016 Trimester 2

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

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. We will base all project work on SPARK Ada and use ada core's tool chain *.

By the end of the course, students should be able to:

1. Apply design by Contract to build high integrity code (BE graduate attributes 3(a), 3(c)).

2. Review and enhance requirements and be able to trace requirements throughout the design process (BE graduate attributes 3(f), 3(d)).

3. Understand relation between testing and verification and manage their relative costs and benefits (BE graduate attributes 3(a), 3(d), 3(f)).

This is an introductory course and, in the time available, can not go into a lot of detail.

Textbook

Students will be directed to online material and handouts will be provided.

Course Delivery

Where helpful the course will follow a **problem based learning** approach.

Assignments will be set that require the student to develop required skills. These assignments will largely be practical but occasionally will be directed reading.

Lectures will cover material that needs to be understood in order to complete the assignments.

The course is based on lectures and assignments. It is essential that students attempt all assignments and be able to reflect on the strengths and weaknesses of their solutions.

Initially each week comprises of two lecture, and one practical session per week but as time progresses less lectures and more practical sessions are likely.

Monday 12:00-12:50 : EALT206 Lecture

Wedsday 12:00-12:50 : EALT206 Lecture

Friday 12:00-12:50 : EALT206 Tool use

Assignments

Assignment 1: 20% : (Week 4) Thursday 4th August 2016

Assignment 2: 30% : (Week 7) Thursday 8th September 2016.

Assignment 3: 50% : (Study Week 1) Thursday 20th October 2016

Assignments will be accepted up to noon on the above mentioned days, with a 25% penalty for delay of less than one week. 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 organizer as early as possible to discuss alternative arrangements.

Marked assignments will be returned via email or during lecture or discussion

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 and tutorials: *3 hours*
- Readings: *2 hours*
- Assignments: *5 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 for SWEN 421 is David Streader. His contact details are:

- *David Streader*
- Cotton 260
- +64 4 463 5655
- David.Streader@ecs.vuw.ac.nz

Lecturer for SWEN 421 is Julian Mackay. His contact details are:

- _Julian Mackay _
- Cotton 254
- +64 4 ????
- Julian.Mackay@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_2016T2/. There you will find, among other things, this document, the lecture schedule and assignment handouts, and the SWEN 421 Forum. The forum is a web-based bulletin board system. Questions and comments can be posted to the forum, and staff will read these posts and frequently respond to them.

Assessment

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

Item	Weight
Assignments	100%

Exam

There is no final exam for SWEN 421.

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 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 Friday 22 July 2016. The last date for withdrawal without being regarded as having failed the course is Friday 23 September 2016 -- 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/policy, 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.

Course Outline as PDF