

Security Engineering - Course Outline

NWEN 405: 2010 Trimester 2 (12 July - 14 November 2010)

(NOT YET AUDITED)

This document sets out the workload and assessment requirements for NWEN 405. 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.

The Course

The Internet's role as a large, public, distributed system has raised security to an issue of critical importance. This course examines security mechanisms, security policies, security evaluation and risk management, security issues in networks and operating systems, and case studies that show how these security techniques can be used to solve real-world problems such as conducting trustworthy auctions and secret ballots.

Learning Objectives

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

1. Demonstrate their understanding of key security terminology through activities such as writing an essay on recent developments in the science of security (BE graduate attributes [2\(b\)](#) and [3\(f\)](#)).
2. Demonstrate their understanding of key security engineering principles by applying those principles to the design of a secure system (BE graduate attributes [2\(b\)](#), [3\(a\)](#), [3\(c\)](#), [3\(d\)](#) and [3\(f\)](#)).
3. Demonstrate their understanding of threats to computer systems by being able to evaluate the suitability of a security design for a given system (BE graduate attributes [2\(b\)](#), [3\(a\)](#), [3\(c\)](#), [3\(d\)](#) and [3\(f\)](#)).

Course content

The course will include the following topics:

1. Security usability/psychology.
2. Security protocols and their evaluation.
3. Cryptography.
4. Access control.
5. Distributed systems.
6. Network security.
7. Security policies.
8. Security assurance.
9. Biometrics.
10. Telecoms security.
11. Copyright/DRM.

Course Delivery

There will be weekly 1 hour lectures, an essay and a practical project. Students will be expected to have read the appropriate readings before the class so that they can ask appropriate questions and contribute.

Staff

The course organiser and lecturer for NWEN 405 is [Ian Welch](#). His contact details are:

- [Ian Welch](#)
- [Cotton 337](#)
- +64 4 463 5664
- ian.welch@ecs.vuw.ac.nz

Trimester dates

This is a T2 course. The trimester starts on the 12th of July and ends on the 14th of November. The study and

examination period for trimester T2 is 18 October - 14 November.

The last date for withdrawal from NWEN 405 with entitlement to a refund of tuition fees is Fri 23 July 2010. The last date for withdrawal without being regarded as having failed the course is Fri 24 Sept 2010 -- though later withdrawals may be approved by the Dean in special circumstances.

Class times and room numbers

Lectures for NWEN 405 are: *Wed and Thu 1100-1150 in Alan MacDiarmid Building LT 105*. In addition, there is a Tue 1100-1150 slot in the same room that will only be used for presentations, tutorials or announcements.

Expected Workload

Most of the learning in this course will take place outside of class. Overall you should expect to spend 10 hours per week on the course and 30 hours during the mid-trimester break and study break. The approximate breakdown is as follows:

<u>Item</u>	<u>hours</u>
Reading for the lecture	2
Attending the lecture	2
Practical work	6

Group work

There is no specified group work. However, you are encouraged to talk about principles etc that relate to the internally assessed work although you should write up your own answers.

Readings

The textbook for NWEN 405 is: *Security Engineering: A Guide to Building Dependable Distributed Systems*. Ross Anderson. *Second Edition*. There is currently one copy on closed reserve.

Materials and equipment

No special materials or equipment are required for this course.

Assessment requirements

There is an essay, a practical project and a final examination for this course. The essay will give you an opportunity to explore current security topics in detail, the practical project will give you practice at the design, implementation and security evaluation of a secure system and the examination will test your knowledge of key concepts. All work should be submitted through the School's online submission system.

Your grade for NWEN 405 will be determined based on the following assessment weightings:

<u>Item</u>	<u>Weight</u>	<u>Date due</u>
Essay	20%	22 Aug
Practical Project	20%	15 Oct
Final Examination	60%	Exam period

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.

Penalties

It is expected that all internally assessed work will be handed in on the due date. However, **with permission** from the course organiser, it may be possible to negotiate a few days grace.

Mandatory Requirements

You must submit both the essay and project and gain at least a **D** in the final examination. Should you have problems with submission of the internally assessed work, **contact the course organiser** as soon as possible.

Passing NWEN 405

To pass NWEN 405, a student must satisfy mandatory requirements and gain at least a **C** grade overall.

Plagiarism

Working Together and Plagiarism

We encourage you to discuss the principles of the course and assessed work 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.

Use of Turnitin

Student work provided for assessment in this course may be checked for academic integrity by the electronic search engine <http://www.turnitin.com>. Turnitin is an online plagiarism prevention tool which identifies material that may have been copied from other sources including the Internet, books, journals, periodicals or the work of other students. Turnitin is used to assist academic staff in detecting misreferencing, misquotation, and the inclusion of unattributed material, which may be forms of cheating or plagiarism. At the discretion of the head of School, handwritten work may be copy typed by the School and subject to checking by turnitin. You are strongly advised to check with your tutor or the course coordinator if you are uncertain about how to use and cite material from other sources. Turnitin will retain a copy of submitted materials on behalf of the University for detection of future plagiarism, but access to the full text of submissions will not be made available to any other party.

Retention of Submitted Work

For the purposes of accreditation of the BE, some of your work may be copied for review by the accreditation panel.

Communication of additional information

The main means of communication outside of lecture will be the NWEN 405 web area at http://ecs.victoria.ac.nz/Courses/NWEN405_2010T2/. There you will find, among other things, this document, the [lecture schedule](#) and [assessed work](#), and the [NWEN 405 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.

You can also contact the course organiser either by visiting his office or enquiring at the School office. The School office is located on level three of the Cotton Building ([Cotton 358](#)).

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.

