NWEN405 (2017) - Security Engineering

Prescription

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.

Course learning objectives

Students who pass this course should be able to:

1. Demonstrate their understanding of key security concepts through activities such as writing as reports or solving set problems.
2. Demonstrate their understanding of key security engineering principles by applying those principles to the analysis of a secure system.
3. Demonstrate their understanding of threats to computer systems by being able to carry out the assessment of the security of a networked system.

Withdrawal from Course

Withdrawal dates and process:
http://www.victoria.ac.nz/students/study/course-additions-withdrawals

Lecturers

Ian Welch (Coordinator)

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403 Alan MacDiarmid Building, Kelburn

We will have guest speakers talking about law and the Internet, the role of government in securing the Internet, industry experience and the role of international standards in computer security.

We also have a guest workshop leader Prof Ray Hunt who will run penetration testing labs one weekend and other assessment work will be led by Dr (soon to be) Masood Mansoori.

Teaching Format

During the trimester there will be two lectures per week.

Student feedback

Student feedback on previous iterations of the courses is available via the NWEN 405 web site at http://ecs.victoria.ac.nz/Courses/NWEN405_2017T2/.

Dates (trimester, teaching & break dates)

- Teaching: 17 July 2017 - 20 October 2017
- Break: 28 August 2017 - 08 September 2017
- Study period: 24 October 2017 - 26 October 2017
- Exam period: 27 October 2017 - 18 November 2017

Class Times and Room Numbers

17 July 2017 - 27 August 2017
- **Wednesday** 12:00 - 12:50 – 101, 14 Kelburn Pde, Kelburn
- **Friday** 12:00 - 12:50 – 101, 14 Kelburn Pde, Kelburn

11 September 2017 - 22 October 2017
- **Wednesday** 12:00 - 12:50 – 101, 14 Kelburn Pde, Kelburn
- **Friday** 12:00 - 12:50 – 101, 14 Kelburn Pde, Kelburn

Other Classes

We will arrange a lab slot (1 hour) during the first week of lectures in discussion with the rest of the class.

Set Texts and Recommended Readings

Required

There are no required texts for this offering.

Mandatory Course Requirements

There are no mandatory course requirements for this course.

If you believe that exceptional circumstances may prevent you from meeting the mandatory course requirements, contact the Course Coordinator for advice as soon as possible.

Assessment

This course will be internally and externally assessed through two assignments, two practical projects and a final examination.

Assignment one (two weeks).	27 Aug	CLO: 1	10%
Assignment two (two weeks).	22 Oct	CLO: 1	10%
Network security project (approx 20 hours).	10 Sep	CLO: 2,3	25%
Software security project (approx 20 hours).	8 Oct	CLO: 2,3	25%
Final examination (2 hours).	During examination period.	CLO: 1,2,3	30%

Penalties

In fairness to other students, work submitted after any deadline will incur a penalty for lateness. The penalty is 10% of the marks available, for example if an assignment is out of 20 and the assignment receives 50% then one day late means the mark will be out of 18 and the student will receive 50% of 18.

Extensions

The cutoff for on-time submission is midnight on the due date. Late days are counted in 24-hour periods. Submitting between 5:01pm on the due date and 5pm the next day is one day late, and so on.

You are given a total of 5 "grace days" (self-granted extensions) which you can use to give yourself extra time without penalty.

Late work handed in when you have run out of grace is discounted 10% per day late.

Submission & Return

Submission and return of work will be done via the ECS online submission system. Please refer to the ECS Wiki page for NWEN 406 at https://ecs.victoria.ac.nz/Courses/NWEN405_2017T2/.

Marking Criteria

Details about the assessment requirements and marking criteria will be posted on the ECS course website.

Required Equipment

Project one requires attendance at University, other project work can be done at home.

Other Activities

We will be working on project one during the long weekend of 18-20th August. If you cannot make this you must inform the course coordinator as soon as possible and alternative arrangements will be put in place.

Workload

In order to maintain satisfactory progress in NWEN 405, you should plan to spend an average of 10 hours per week on this paper. A plausible and approximate breakdown for these hours would be:

- Lectures: 2 hours
- Readings and assignments: 4 hours
- Practical work: 4 hours

Teaching Plan

Communication of Additional Information

The primary means of communication outside of lectures is the NWEN 405 web site at http://ecs.victoria.ac.nz/Courses/NWEN405_2017T2/. There you will find, among other things, more details about course requirements, the course schedule (with links to copies of the lecture slides), details and resources for the project work, the NWEN 406 Forum, ways of getting help, and the assignment submission system. The forum is a web-based bulletin board system. Questions, comments, and responses can be posted to the forum.

Links to General Course Information

- Academic Integrity and Plagiarism: http://www.victoria.ac.nz/students/study/exams/integrity-plagiarism
- Academic Progress: http://www.victoria.ac.nz/students/study/progress/academic-progess (including restrictions and non-engagement)
- Dates and deadlines: http://www.victoria.ac.nz/students/study/dates
- Grades: http://www.victoria.ac.nz/students/study/progress/grades
- Special passes: Refer to the Assessment Handbook, at http://www.victoria.ac.nz/documents/policy/staff-policy/assessment-handbook.pdf
- Statutes and policies, e.g. Student Conduct Statute: http://www.victoria.ac.nz/about/governance/strategy
- Student support: http://www.victoria.ac.nz/students/support
- Students with disabilities: http://www.victoria.ac.nz/st_services/disability/
- Student Charter: http://www.victoria.ac.nz/learning-teaching/learning-partnerships/student-charter
- Terms and Conditions: http://www.victoria.ac.nz/study/apply-enrol/terms-conditions/student-contract
- Turnitin: http://www.cad.vuw.ac.nz/wiki/index.php/Turnitin
- University structure: http://www.victoria.ac.nz/about/governance/structure
- VUWSA: http://www.vuwsa.org.nz

Offering CRN: 18606
Points: 15
Prerequisites: NWEN 304, 30 further 300-level pts from (COMP, ECEN, NWEN, SWEN);
Restrictions: COMP 418
Duration: 17 July 2017 - 19 November 2017
Starts: Trimester 2
Campus: Kelburn