



Prescription

This course addresses the concepts, techniques and tools required for developing software that reliably preserves the security properties of the information and systems they protect. The course covers common software vulnerabilities, specifying security requirements, secure design principles and techniques for evaluating software security. Practical work will involve developing and evaluating the security of C and Java programs. NB: this course will first run in 2019.

Course learning objectives

Students who pass this course will be able to:

1. Describe the role of, and develop security requirements and abuse scenarios based upon, an understanding of the differences between the methodologies used by attacker and a testers to discover security vulnerabilities that could lead to security risks.
2. Apply knowledge of threats, vulnerabilities and how these may interact to choosing and implementing client-side and server-side software security controls to mitigate software security risks.
3. Evaluate the security of software using a range of security techniques including vulnerability assessment, fuzzing and code review.

Withdrawal from Course

Withdrawal dates and process:

<https://www.victoria.ac.nz/students/study/course-additions-withdrawals>

Lecturers

Ian Welch (Coordinator)

ian.Welch@vuw.ac.nz 04 4635664

403 Alan MacDiarmid Building, Kelburn

Harith Al-Sahaf

harith.al-sahaf@vuw.ac.nz 04 4639792

410 Cotton Bldg Gate 7 Kelburn Pde, Kelburn

Teaching Format

Weekly lectures, three assignments, helpdesks and in class quizzes during whole course. The first assignment is paper-based and the other two assignments involve practical work. All assessments are designed to reinforce material taught in lectures. Helpdesks are optional and used to support the completion of the assessments. Gosoapbox is used in class to reinforce learning. The examination topics

will be related to the lecture material and learning during the assignments.

Student feedback

This is the first time we have run the course so there is no feedback to report upon.

Dates (trimester, teaching & break dates)

- Teaching: 08 July 2019 - 13 October 2019
- Break: 19 August 2019 - 01 September 2019
- Study period: 14 October 2019 - 17 October 2019
- Exam period: 18 October 2019 - 09 November 2019

Class Times and Room Numbers

08 July 2019 - 18 August 2019

- **Tuesday** 12:00 - 12:50 – LT101, Maclaurin, Kelburn
- **Friday** 12:00 - 12:50 – LT101, Maclaurin, Kelburn

02 September 2019 - 13 October 2019

- **Tuesday** 12:00 - 12:50 – LT101, Maclaurin, Kelburn
- **Friday** 12:00 - 12:50 – LT101, Maclaurin, Kelburn

Other Classes

There are no tutorials but there will be weekly helpdesks from week 4 of the course.

Set Texts and Recommended Readings

Required

There are no required texts for this course.

Mandatory Course Requirements

In addition to achieving an overall pass mark of at least 50%, students must:

- Achieve at least a **D** in the final examination.

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

Assessment Item	Due Date or Test Date	CLO(s)	Percentage
Threat modelling assignment (2 weeks).	4/8/19	CLO: 1	10%
Practical assignment 1 (3 weeks).	8/9/19	CLO: 2	20%
Practical assignment 2 (3 weeks).	6/10/19	CLO: 3	20%
Final examination (2 hours).	TBA	CLO: 1,2,3	50%

Penalties

Late assignment submissions will receive a penalty of 10% for each day late (pro-rata).

Extensions

Each student will have three "late days" which you may choose to use for any assignment or assignments during the course. There will be no penalty applied for these late days. You do not need to apply for these, instead any late days you have left will be automatically applied to assignments that you submit late.

Submission & Return

All work is submitted through the ECS submission system, accessible through the course web pages. Marks and comments will be returned through the ECS marking system, also available through the course web pages.

Marking Criteria

The two practical assignments are marked in person. They are assessed on your understanding of the security issue, code quality and how well the student can explain how they solved the problem to the marker. All other assessment is done by tutors or lecturers, marking to a scheme produced by the lecturers.

Workload

The total workload for CYBR 271 is 150 hours. In order to maintain satisfactory progress in CYBR 271, you should plan to spend an average of 10 hours per week on this course. An approximate breakdown is: lectures 2 hours, assignments 6-7 hours, reading and review 1-2 hours.

Teaching Plan

Communication of Additional Information

All online material for this course can be accessed at https://ecs.victoria.ac.nz/Courses/CYBR271_2019T2/.

Links to General Course Information

- Academic Integrity and Plagiarism: <https://www.victoria.ac.nz/students/study/exams/integrity->

plagiarism

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

Offering CRN: [30040](#)

Points: 15

Prerequisites: CYBR 171, NWEN 241

Duration: 08 July 2019 - 10 November 2019

Starts: Trimester 2

Campus: Kelburn