



Prescription

This course addresses key concepts, techniques and tools needed to provide security in computer and communications systems. Topics include the need for security, system and network security threats such as malware or denial-of-service attacks, secure systems design, identity management, authentication, access control, and computer network defence. Practical work will involve developing operating system and network security tools such as keyloggers as well as choosing and implementing appropriate security controls to meet a small organisation's network security needs. The examination will be related to the lecture material and learning during the assignments.

Course learning objectives

Students who pass this course will be able to:

1. Define system and network security in terms of information security properties and system and network security threats.
2. Explain the role of secure systems design, cryptography, identity management, authentication and access controls in system and network security.
3. Compare and contrast different approaches to network defence such as cryptographic mechanisms, host-based protection, firewalls, intrusion detection and prevention systems.
4. Evaluate a small organisation's network security needs and deploy network defences to enforce appropriate network security policies.

Course content

This course addresses key operating system and communication systems security concepts and discusses the vulnerabilities and threats associated with widely used communication protocols. The course also examines appropriate security controls and their implementation to meet a small organisation's network security needs.

This course is co-taught with NWEN 438 in 2020.

Withdrawal from Course

Withdrawal dates and process:

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

Lecturers

Masood Mansoori (Coordinator)

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Teaching Format

Weekly lectures, lab sessions and individual assignments over the whole course.

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: 02 March 2020 - 07 June 2020
- Break: 13 April 2020 - 27 April 2020
- Study period: 08 June 2020 - 11 June 2020
- Exam period: 12 June 2020 - 27 June 2020

Class Times and Room Numbers

02 March 2020 - 22 March 2020

- **Tuesday** 12:00 - 12:50 – LT1, Te Toki a Rata, Kelburn
- **Friday** 12:00 - 12:50 – LT1, Te Toki a Rata, Kelburn

27 April 2020 - 07 June 2020

- **Tuesday** 12:00 - 12:50 – LT1, Te Toki a Rata, Kelburn
- **Friday** 12:00 - 12:50 – LT1, Te Toki a Rata, Kelburn

Other Classes

Students must sign up in myAllocator for a regular one-hour laboratory session each week.

Set Texts and Recommended Readings

Required

Guide to Network Defense and Countermeasures, 3rd Edition by Randy Weaver, Dawn Weaver, Dean Farwood is primarily used throughout the course and includes most of the topics covered in this course.

Additional notes are provided before/after each lecture session accordingly.

Mandatory Course Requirements

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

- Achieve at least a **D** grade in the final examination, because the examination assesses understanding of concepts and learning from assignments independently.
- Submit during your weekly lab at least eight of the ten short lab tasks assigned in the lab over the duration of the course.
- Make a reasonable attempt at both assignments.

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

The assignments will apply theory learnt in the lectures, while the examination will be related to the lecture material and learning during the assignments.

Assessment Item	Due Date or Test Date	CLO(s)	Percentage
Assignment One (5 weeks)	28-4-2020	CLO: 1,2	30%
Assignment Two (5 weeks)	09-06-2020	CLO: 3,4	30%
Final examination (two hours)	TBA	CLO: 1,2,3,4	30%
Workshop and lab activities (week 2-11)	TBA	CLO: 1,2,3,4	10%

Penalties

Late submissions will receive a penalty of 25% for each day late, rounded up to the nearest whole day.

Extensions

Individual extensions will only be granted in exceptional personal circumstances, and should be negotiated with the course coordinator before the deadline whenever possible. Documentation (eg, medical certificate) may be required.

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.

Workload

The total workload for CYBR 371 is 150 hours. In order to maintain satisfactory progress in this course, you should plan to spend an average of 10 hours per week on this course. An approximate breakdown for these hours would be:

- Lectures and laboratories: 4 hours per week
- Consolidating lectured material, through readings, completion of exercises, worksheets: 3 hours per week
- Assignments: 3 hours per week

Teaching Plan

See https://ecs.wgtn.ac.nz/Courses/CYBR371_2020T1/LectureSchedule

Communication of Additional Information

All online material for this course can be accessed at

Links to General Course Information

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

Offering CRN: [32072](#)

Points: 15

Prerequisites: CYBR 171, NWEN 241, 243

Duration: 02 March 2020 - 28 June 2020

Starts: Trimester 1

Campus: Kelburn