

School of

Engineering and Computer Science

Te Kura Mātai Pūkaha, Pūrorohiko

CYBR 171 T1 2023

Ngā whakapūtanga o Te Haumaruru rorohiko Cybersecurity Fundamentals

Harith Al-Sahaf, Lisa Patterson, Ian Welch

Welcome to CYBR 171

Safety Briefing



<https://www.youtube.com/watch?v=gUzLLCYeJIM>

CYBR171: Teaching Staff

- Harith Al-Sahaf, course coordinator

harith.al-sahaf@ecs.vuw.ac.nz

<https://people.wgtn.ac.nz/Harith.Al-Sahaf>



- Lisa Patterson, assistant lecturer

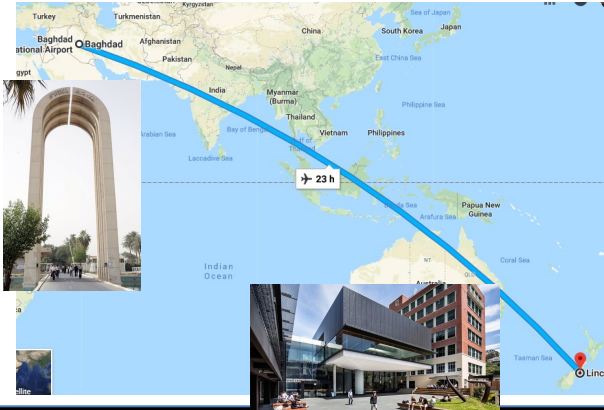
lisa.patterson@ecs.vuw.ac.nz

<https://people.wgtn.ac.nz/lisa.patterson>



About me - *Harith*

- Born in Lincoln-ChCh (Ōtautahi), grew up and went to school in Baghdad.
- Bachelor of Computer Science from Baghdad University.
- Masters and PhD in Computer Science from Victoria University of Wellington.



Harith's Teaching and Research

- Been tutoring/teaching at Victoria University since 2010:
 - Database System Engineering
 - Data Structures and Algorithms
 - Artificial Intelligence and Data Mining (Neural Networks and GP)
 - Cybersecurity Fundamentals
 - Secure Programming
 - Applications of Cryptography
 - Human and Organisational Security
 - Malware and Reverse Engineering
- Research topics:
 - Evolutionary computation (GP, PSO...)
 - Computer vision (image classification, object detection, Skin cancer detection...)
 - Feature manipulation (extraction, selection and construction)
 - Cybersecurity (Ransomware detection/classification, Phishing/Spam/DDoS....)
 - Machine learning and data mining (Big data analysis, transfer learning)



About me - *Lisa*

- Auckland, Wellington, Travel, Kāpiti Coast
- Corporate Financial Services, Small Business Ownership, Independent Contracting, Bachelor of IT, Master of IT, PhD Engineering (cybersecurity)



Lisa's Teaching and Research

- Teaching at Te Herenga Waka
Victoria University of Wellington
 - 171 Cybersecurity Fundamentals
 - 373 Human and Organisational Security
 - 472 Digital Forensics
 - MC Cybersecurity Essentials
- Research interests:
 - Data Privacy and Security,
 - Privacy Preserving Behaviour
 - Social Engineering,
 - Behavioural Theories
 - Internet of Things (IoT),
 - Security Aspects of Remote Working

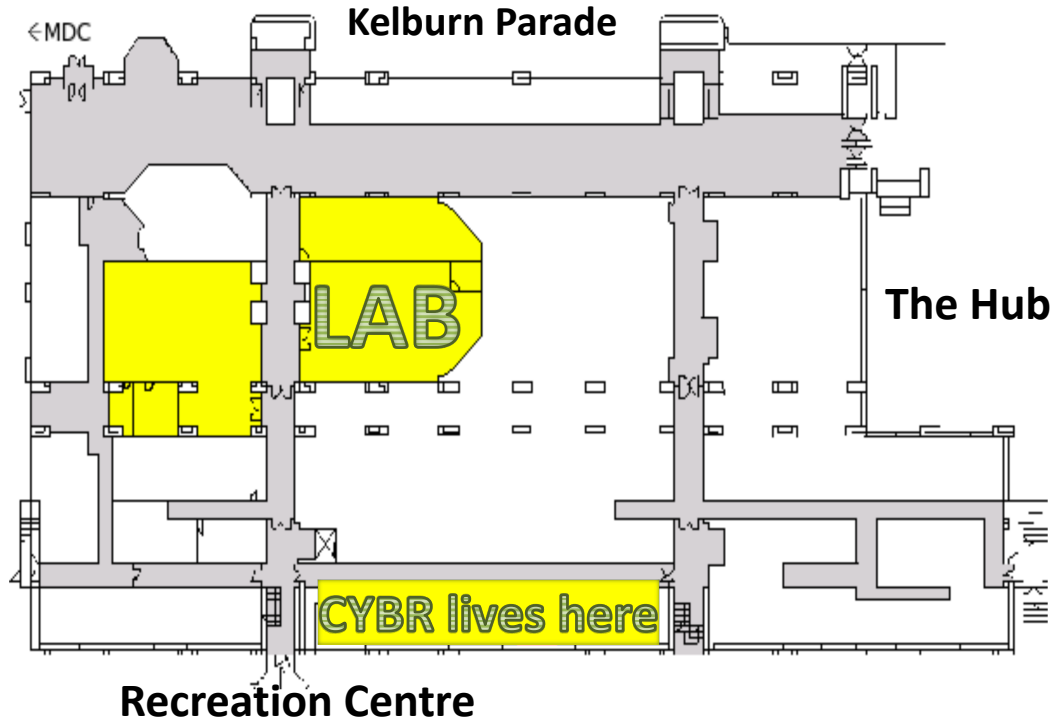
Legislative Environment

Our Teaching Philosophy

- Most of your learning is done outside of the lectures.
 - By doing assigned reading.
 - Reviewing lecture notes and videos.
 - Practical hands-on exercises in laboratories.
 - Completing assignment work.
 - Reviewing feedback on labs and assignments.
- Our role is to:
 - Share our knowledge
 - Create an environment where you can learn
 - Model how to be “productively stupid” (<http://jcs.biologists.org/content/121/11/1771>)
 - we can't know everything
 - that's okay
 - what we do learn is how to find out what we don't know

Where do we live?

- Most of the CYBR staff live in the same corridor.
- Rooms **CO129**, and **CO127** with our names on the door.
- You can also **email** us or catch us after a lecture.
- Door is open means we are available for any queries.



Agenda

- What is cybersecurity?
- How is the course organised and delivered?
- What topics do we cover?
- How do we assess you?
- What are our respective expectations?
- How to get help?
- What's next

What is Cybersecurity?

- Te Reo Maori: haumara-a-rorohiko
- Technology, people, information and processes
- Safe or **assured operations** despite being attacked by **adversaries**
- Aspects of law, policy, human factors, ethics, and risk management
- Penetration testers, programmers building secure software, consultants, system administrators, incident handlers, devOps...

Course Delivery Mode

This course is designed for *in-person* study, and students are strongly recommended to attend lectures, tutorials and labs on campus.

All lectures are *streamed live via Panopto* and posted on the course page later that day.

Helpdesks are one-on-one sessions with tutors in-person or **via zoom** (*only one or two sessions*).

Tests are *in-person*, with limited resources available to conduct them online as well.

Course Website

- ECS website:
https://ecs.wgtn.ac.nz/Courses/CYBR171_2023T1/WebHome
- Course information, announcements, videos, quizzes
- Assignment details (times, dates, handouts, files,...)
- Various links
- **Primary administrative communication channel.**
- **We will NOT spam you with course emails.**
- **Make sure you check (or forward) your MYVUW email account.**

Course Organisation

- **Lectures**

- **Monday** 11:00am, **Tuesday** 11:00am, **Thursday** 11:00am all in MCLT103
- Monday and Tuesday introduce key concepts and ideas
- Thursday (in general) is used to revise the week or supplementary material, or [guest lecture](#)

- **Labs and Assignments (10% + 40%)**

- Putting the ideas and techniques into practice
- 4 labs, with two weeks to complete and submit each lab
- 2 assignments (due **Sun 9th April**, **Sun 28th May**)

- **Tests (50%)**

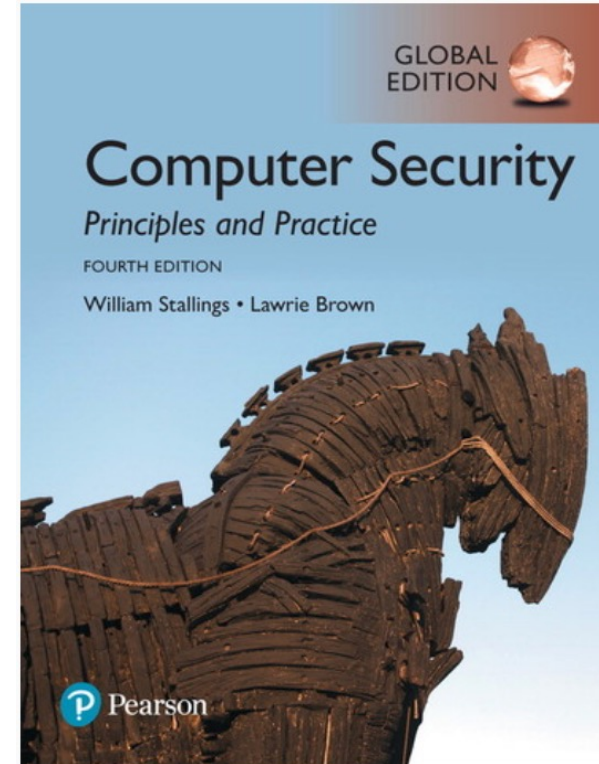
- Test 1: week eight, Monday **1st May** at **5:30 pm** (various rooms)
- Test 2: examination period (TBA)

Readings

- No **required** textbook but some recommended readings/video resources.
- We will post readings or links to video resources on the schedule page from time-to-time.
- We will either use resources that are free or available for free via University library website.

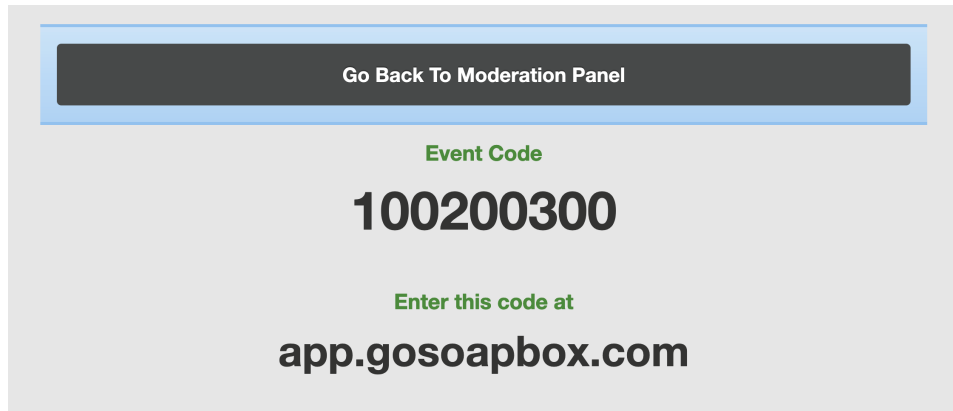
Readings (cont.)

- We will be referring to readings from "*Computer Security: Principles and Practice, Global Edition eBook (4e)*" by William Stallings and Lawrie Brown.
- This book is **highly recommended** for this course and for people who want to explore cybersecurity more deeply.
- The print copy is available at Vic Books (\$NZ 48.00)
- There is an e-book version available (\$NZ 69.29) from <https://www.pearsoned.co.nz/9781292220635>
- Online-only version can be accessed via the University library ([Link](#)) **Limited to 6 concurrent access tickets**



Lectures

- We will record the lectures (accessible via <https://nuku.wgtn.ac.nz/>).
- Most lectures are for us to present fundamental information but some are for active learning.
- We will use a tool called GoSoapBox.



Assessment: *Assignments*

- Two assignments.
 - 40% of total grade (20% each)
- Labs support doing the assignments themselves, this is where you get help on completing them.
- Submitted electronically with penalty of **10%** for each day (pro-rata).
- Three 'slip' days available to be spread over both assignments (**not labs**).
- Contact the course coordinator (**Harith**) in all other cases to discuss options.

Assessment: *Labs*

- Labs help you get with the assignment work.
- Four labs worth a total of 10% of your final grade.
- You do these in your own time *but supported by tutorial sessions*
- Tutorial sessions start from **WEEK 2** in CO139 (a couple of them will be via zoom).
- Sign up for a tutorial session today!
- <https://www.wgtn.ac.nz/students/study/timetables/tutorial-sign-up>
Use your Victoria student username and password.

Assessment: *Tests*

- **Test 1**

- 1 hour long
- Worth **25%** of your final grade
- Will take place during week eight (after the break)
- ***Monday, 1st May 2023 at 5:30 pm***
- Questions will relate to topics covered in assignments and labs
- Closed book, no devices, leave bags at the front.

- **Test 2**

- 2 hours long
- Worth **25%** of your final grade
- Will take place during the assessment period (June)
- Questions will be similar to those asked in assignments and labs
- Closed book, no devices, leave bags at the front.

Final Grade

Laboratory exercises (10%)

+ Assignments (40%)

+ Tests (50%)

Grade	Normal mark range	Midpoint	Indicative Characterisation
A+	90-100	95	Outstanding performance
A	85-89	87	Excellent performance
A-	80-84	82	Excellent performance in most respects
B+	75-79	77	Very good performance
B	70-74	72	Good performance
B-	65-69	67	Good performance overall, but some weaknesses
C+	60-64	62	Satisfactory to good performance
C	55-59	57	Satisfactory performance
C-	50-54	52	Adequate evidence of learning
D	40-49	45	Poor performance overall, some evidence of learning. Fail.
E	0-39	20	Well below the required standard. Fail.

When Stuff Goes Wrong!

- **Three** late days for assignments (not labs), [no need to ask](#).
- Exceptional extensions:
 - ***Talk to course coordinator asap***
 - May need to provide supporting documentation (i.e. doctor's certificate)
- Miss the tests? ***Talk to course coordinator asap***.
- Not going to get 40% for assessments? ***Talk to course coordinator***.

Mandatory Course Requirements

- Mandatory requirement means: “If you fail to meet these requirements, even if you do everything else perfectly. I believe this shows a gap in your knowledge, severe enough to warrant you failing in the course.”
- You must get 40% **across the two tests** or better.
- You must get 40% **across the assignments** and laboratory exercises.
- Failing to meet any of these conditions => K grade.

Withdrawal Dates

- Withdrawal **with** refund
 - up to and including 10th March - no consequences
- Withdrawal **without** refund
 - 11th March—12th May
 - Withdrawal Recorded
 - No grade recorded on transcript
- Late withdrawal with Dean's permission:
 - After 12th May.
 - Requires permission of Associate Dean (**Christopher Hollitt**).
 - Given - only when special circumstances arise.
 - Withdrawal counts as a fail, unless the Associate Dean gives you approval to withdraw.

Plagiarism (**Cheating**)

- You must not present **anybody else's work** as if it was your own work:
 - Basic principle of academic honesty.
 - Applies to work by other students, friends, relatives, the web, books ...
 - If you received substantial help, then you must state who helped and how much.
 - If you declare any work from someone else, then **it isn't plagiarism!!!** (but they must not have done it for you).

Plagiarism (cont.)

- We encourage you to talk to each other and help each other understand and solve problems ***BUT***
- The work you submit should be yours.
- If you use resources, quotes, or ideas from the lectures, assignments or tutors, then you do not need to declare it, from any other source, then declare it!
- **Consequences of Plagiarism are severe and can include immediate failure of the course.**

Plagiarism (cont.)

- **AI Red** - Students are not allowed to use AI tools (**ChatGPT, Bing Chat, Github Copilot, Google Bard, Moonbeam, etc...**) to generate submitted material, or complete coursework in this **course**



Your Expectations

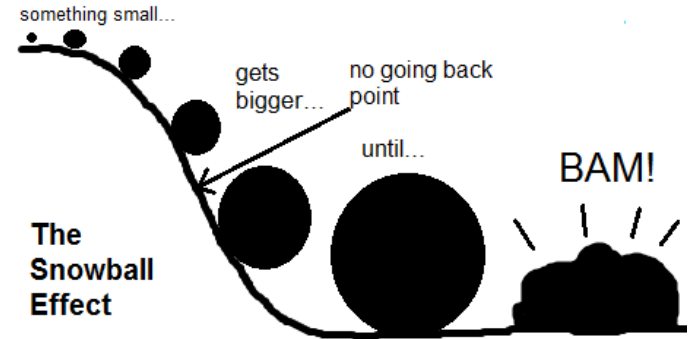
- Assigned work is prescriptive, makes clear what you are and not expected to do.
- Focus on acquisition of basic knowledge and development of fundamental skills.
- Return grades within a reasonable time, around two weeks, but other situations may have an impact on our ability to do this.
- Provide feedback on assessed work either to the class as a whole and/or on returned work.
- Post at least partial slides prior to the class and full slides afterwards.
- Respond to emails with **CYBR 171** in the subject line.
- Have office hours.

Our Expectations

- Be able to restate knowledge in your own words and apply to well-defined simpler problems.
- Take responsibility for meeting due dates and deadlines, talk to the course coordinator if you cannot.
- Please be civil in the lecture rooms; noise carries and is disruptive to other students.
- Missed a lab, attend another, but if full, try another one.
- Participation in class is an expectation, BUT if you don't feel comfortable, just say **PASS** or shake your head, and we will move onto next person.

Help is Available

- Course advice: See Harith or Lisa
- Personal issues: see the [Counselling Centre](#)
- Additional academic help: See [Learning Support Services](#)
- **Problems snowball.** Don't wait until you can't take the weight. Get help sooner, not later.



<https://eportfolios.macaulay.cuny.edu/bidyuthdash/2020/12/27/tackling-debt-the-snowball-effect-the-fastest-and-the-best-way-to-achieve-financial-freedom/>

Help is Available (cont.)

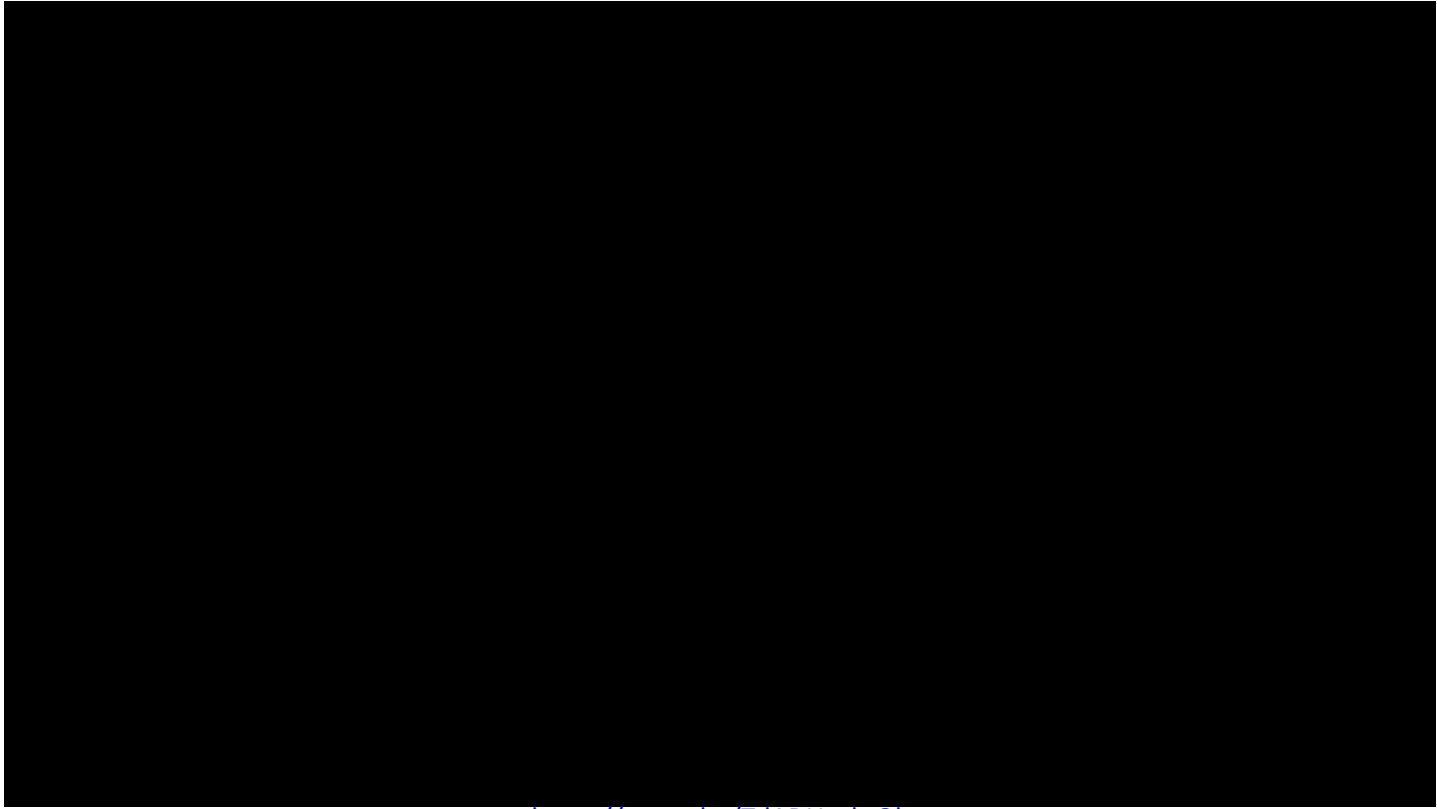
- Evening Study Group (**Starts this week!**)
- Monday, Wednesday - 6:00—8:00 pm (in-person only **AM104**)
- **Thursday** - 6:00—7:00 pm
<https://vuw.zoom.us/my/engrworkshops>
(Zoom only)
- General help for any first-year course with Howard and others.



Communication Channels

- Lectures/tutorials
- Labs (tutors)
- Forum (linked from course page for Q&A with class)
- Office hours
 - Harith – Monday 14:00-15:00 (CO129) <https://vuw.zoom.us/my/alsahaf>
 - Lisa – Tuesday 14:00 – 15:00 (CO127)
- Email

Class Representative(s)



<https://youtu.be/TdADUaxh-Qk>

Class Representative(s)

- <https://www.vuwsa.org.nz/class-representatives>
- Representing your class has many benefits; VicPlus points, Class Rep certificates, professional and personal growth, and links to other representation opportunities.
- **Interested?** Please provide your details via a form to be announced via Nuku announcements.
- **We will have a live vote on Thursday**
- We usually have THREE to share the load.
- Setup a Facebook page private to the students.

Weekly Schedule

Time	Mon	Tue	Wed	Thu	Fri
9:00 - 10:00					
10:00 - 11:00					
11:00 - 12:00	CYBR 171 Lecture (MCLT 103)	CYBR 171 Lecture (MCLT 103)	T06	CYBR 171 Lecture (MCLT 103)	T11
12:00 - 13:00					
13:00 - 14:00	T01			T08	
14:00 - 15:00		T03			T12
15:00 - 16:00		T04		T09	
16:00 - 17:00	T02	T05	T07	T10	T13
17:00 - 18:00					
18:00 - 19:00	100-level Workshop 6:00-8:00pm AM104		100-level Workshop 6:00-8:00pm AM104	100-level Workshop 6:00-7:00pm ZOOM (https://vuw.zoom.us/my/engrworkshops)	
19:00 - 20:00					

Final Remarks

- Can I take this course remotely?
 - Yes, ***BUT*** some parts of the course are in-person only, and the alternatives may not be as easy.
- Are the tests in-person?
 - **Students in NZ** ***must*** attend tests in person (barring extenuating circumstances such as illness)
 - **Offshore students:** Tests ***can*** be taken remotely, ***but*** this ***must*** be arranged in advance (**contact us early to make arrangements**).
- Is there any support for remote students?
 - Yes, there will be ***some*** support using Zoom (including office hours and a few helpdesk sessions).

What's on the cards for this week?

- ~~Monday~~: Introduction lecture
- Tuesday: *Cybersecurity key concepts*
- Thursday: *Student rep election*, GoSoapBox and the ECS forum

What to do NOW

- Sign up for helpdesk
- You need to be registered for the course to:
 - 1) Sign up for a tutorial session
<https://www.wgtn.ac.nz/students/study/timetables/tutorial-sign-up>
 - 2) Be able to use the ECS school computers.
<https://ecs.victoria.ac.nz/Support/TechNoteAccountRegistration>
- Forward your *myvuw* email sent to your preferred email.
<https://www.wgtn.ac.nz/digital-solutions/student-services/email-account>