

BUSINESS SCHOOL Te Kura Pakihi

### DEPARTMENT OF INFORMATION SCIENCE

# COMP210 Information Assurance

## COURSE OUTLINE

Semester 2 2023

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#### INFORMATION ASSURANCE – COMP210

The course will consist of a series of lectures, labs, assignments, and tests. These will review the literature and/or empirical research relating to all aspects of information assurance. Topics include: security policy, access control techniques, intrusion monitoring, malicious code, communications security (cryptography), physical security, electronic forensics, mobile phone issues, and continuity and resiliency planning.

#### LEARNING OUTCOMES

By the end of COMP 210, you will be able to:

- 1. identify risks associated with computer usage, storage, communications and mobile phone use, and know how to mitigate those risks;
- 2. explain the importance of ethics and privacy and know and understand when and where these elements impact ICT activity and why.
- 3. describe the basic properties of cryptography and know when and where to use this technology as well as understand the differences between good and bad cryptography in order to be able to make secure use of this tool;
- 4. critically evaluate physical security methods, and where and how these are applied in computing;
- 5. discuss the principles, strengths, limitations and appropriate use of electronic forensics;
- 6. understand the importance of authentication systems, and the relative strengths of contemporary authentication regimes; and
- 7. describe contemporary approaches to intrusion detection and penetration testing.

#### **TEACHING STAFF**

Name: Daniel Alencar da Costa (co-ordinator)

Office: Business School, Room 3.45.

Email: danielcalencar@otago.ac.nz

Office Hours: Please, email to book an appointment.

Name: Chris Edwards

Office: Business School, Room 3.28.

Email: <u>chris.edwards@otago.ac.nz</u>

Name: Mark George

Office: Business School, Room 3.32.

Email: <u>mark.george@otago.ac.nz</u>

Name: Sherlock Licorish

Office: Business School, Room 3.41.

Email: <u>sherlock.licorish@otago.ac.nz</u>

Name: Grant Dick

Office: Business School, Room 3.46.

Email: grant.dick@otago.ac.nz

#### COURSE DELIVERY

The course is organised as a series of lectures, labs, assignments and web documents. *Students are expected to draw from all sources*.

**Lectures** will deliver the theoretical concepts of the paper. Lectures are at 5-5:50pm on Wednesdays and Thursdays.

- Wednesday lectures are held in SDAVA St David Complex Seminar Room A G.o2
- Thursday lectures are held in OBS119 Otago Business School Lecture Room 1.19

**Labs/Tutorials** will provide the space to work on practical activities related to the concepts taught in lectures. Labs/Tutorials will also be used as a space to perform the assessments (i.e., the weekly quizzes, project activities and tests).

#### EXPECTATIONS AND WORKLOAD

#### Assessment

All material presented is examinable (except where stated otherwise) by assignments, quizzes, and tests. Assessment information such as due dates and times, content, guidelines and so on will be discussed at lectures. **Students are responsible for ensuring that they are aware of this information, keeping track of their own progress, and catching up on any missed classes.** 

Assessment	Due Date	% of Final Grade	Requirements to pass this paper	
In-lab Quizzes	Weeks 2-6 Weeks 8-12	20%	A minimum of 20% for both tests combined (i.e., 20 out of 50).	
Assignment #1: Security Essay	August 25th	15%		
Assignment #2: Security Audit	October 13th	15%		
Test #1	August 21st	25%		
Test #2	October 9th	25%		
		100%		

#### In-lab Quizzes (20%)

Quizzes will be held in the labs (check the course calendar) and will contain questions related to the most recent lectures.

#### Assignment #1: Security Essay (15%)

You will be provided with an article about information security, and you will write an essay to answer some key questions about the article. This is an individual assignment.

#### Assignment #2: Security Audit (15%)

You will be given a project and will provide a security audit for that project. This assignment can be done individually or in pairs.

#### Tests #1 and #2 (25% each, totalling 50%)

As this paper does not have a final examination, your knowledge of the theoretical concepts and practical activities will be evaluated through two tests. These tests are individual, and **you must score at least 20%** for both tests combined to pass the paper (i.e., 20 out of 50).

#### **Course Requirements**

You must score at least 20% for tests 1 and 2 combined (i.e., 20 out of 50) to pass the paper.

#### Late Assignments

Assignments submitted after the due date/time **may** be marked if accompanied with a suitable justification.

#### **Special Consideration**

On certain grounds (e.g., illness or bereavement), special consideration on internal assessment may be given. Special consideration is given on a case-by-case basis and *must be requested from the course coordinator well in advance of the assessment deadline.* 

#### Use of ChatGPT and Similar Tools

You are probably aware of large language models (LLMs) such as ChatGPT. COMP210 does not ban the use of LLMs, **but you must disclose any LLM use in submitted internal assessment work**, including full details of how and why you used them. Failure to do so may lead to academic misconduct proceedings. COMP210 internal assessment is marked in person, and you may be required to explain your work to the marker. Inability to do so will affect your mark. You should be wary of LLMs in general, as they are purely statistical models with no actual "understanding" or "knowledge". While their output sounds authoritative, it can often be misleading, incorrect, or even completely fake. This is particularly dangerous when you do not have sufficient understanding of a topic to spot the errors.

#### Presentation Standards

All internal assessments will be submitted via Blackboard.

Finished products/assignments will be returned unmarked if they do not meet an acceptable standard of presentation and grammar. Appropriate referencing of source materials must be used in all submitted work.

#### **COURSE LEARNING RESOURCES**

Textbook Information							
Recommended	Whitman, Michael E., Mattford, Herbert J., Principles of Information Security, Sixth Edition, Course Technology, Cengage Learning, 2018						
Useful Reference	Stewart, James Michael, Tittel, Ed, Chapple, Mike, Certified Information Systems Security Professional Study Guide, Fourth Edition, Wiley Publishing, Inc., 2008, ISBN: 978 o 47o 27688 4, or later edition.						
	Whitman, Michael E., Mattford, Herbert J., Management of Information Security, Third Edition, Course Technology, Cengage Learning, 2010, ISBN: 978 1 4354 8884 7.						

#### Blackboard

*Blackboard* <u>https://blackboard.otago.ac.nz/</u> provides you with access to course materials, class notices, and resources. Blackboard is used to email the whole class, so it is important that you check your student email and regularly.

More general-purpose information related to your studies can be found on Blackboard under the "Study-Related Information" section.

#### COURSE CALENDAR

Week	Commencing	Lecture	Торіс	Assessment	
28 Jul 10	hulan	1	Introduction to Information Assurance and Security	-	
	2	Information Security Concepts and Roles			
29 Jul 17	3	Responsibilities, Threats, and Failures	In-lab Quiz (2%)		
	4	Software Engineering of IA			
30 Jul 24	hal - a	5	Software Engineering of IA (Cont)	In-lab Quiz (2%)	
	JUI 24	6	Authentication: passwords/authorisation		
31 Jul 31			7	Database/Application Security/Attack Demo (pt 1)	In-lab Quiz (2%)
	JUI 31	8	Database/Application Security/Attack Demo (pt 2)		
	A	9	Cryptography & Probability	In-lab Quiz (2%)	
32	32 Aug 7	10	Private- and Public-Key Cryptography		
	33 Aug 14	11	Crypto Applications: e-mail, Web, cryptocurrency	In-lab Quiz (2%)	
33 A		12	Access Control: Techniques and Administration	_	
34 Aug 21	Aug 21	13	Malware	Test #1 (25%) Assignment #1 (15%)	
		14	Policies, Standards, and Practices		
35	Aug 28		Mid-Semester Break		
~ <b>6</b>	Con (	15	Attacks & Monitoring/Intrusion Detection	In-lab Quiz (2%)	
36 Sep 4		16	Machine Learning, Autonomous Systems, Al		
37 Sep 11	37	17	Machine Learning, Autonomous Systems, AI (cont)	In-lab Quiz (2%)	
		18	Deep Fake		
38 Sep 18	•	<b>c</b> 0	19	Digital Preservation	In-lab Quiz (2%)
	Sep 18	20	Electronic Forensics and Data Recovery	_	
39	Sep 25	21	Penetration Testing	In-lab Quiz (2%)	
		22	Cloud Computing & Security/Safety	-	
40	Oct 2	23	Ransomware	In-lab Quiz (2%)	
		24	Business Resilience Planning & Physical Security		
	Oct 9	25	Law & Ethics	Test #2 (25%)	
41 0		26	Wrap-up	Assignment #2 (15%)	

Lectures end Friday 13 Oct 2023

The last test in on Monday 9 Oct; The last assignment is due Friday 13 Oct

#### PACIFIC STUDENT SUPPORT FACILITATORS

#### Malo e lelei

Falaviena (Viena) Faiva works part-time in the Dean's Office at the Otago Business School, Division of Commerce. Viena is of Tongan descent and one of our two Pacific Student Support Facilitators. She responsible for all second-year Pacific students within the division.

Deans Office, Otago Business School Division of Commerce Email: viena.faiva@otago.ac.nz Cell Phone: 021 279 0914

Bula Vinaka

Jekope Ramala Maiono also works part time in the Dean's Office at the Otago Business School, Division of Commerce.

Maiono is of Fijian descent and our other Pacific Student Support Facilitator. He is responsible for all first-year Pacific students in the division.

Deans Office, Otago Business School Division of Commerce Email: jekope.maiono@otago.ac.nz Cell Phone: 021 279 0871

#### KAIĀWHINA MĀORI | MĀORI STUDENT SUPPORT

Ben Sommerville is the Kaiāwhina Māori (Māori student support) for Te Kura Pākihi | Otago Business School. He is able to answer any questions you may have about studying here at the University of Otago. He can provide information about scholarships, campus services, pastoral and financial care. Ben is also here to support those students who are studying away from their whānau, hapū and iwi, to ensure they feel safe and supported. He has a passion for the development of Rangatahi and understands the struggles that can come with academic life.



Tel +64 27 513 6991





Email ben.sommerville@otago.ac.nz

#### DISCLAIMER

While every effort is made to ensure that the information contained in this document is accurate, it is subject to change. Changes will be notified in class and via Blackboard. Students are encouraged to check Blackboard regularly. It is the student's responsibility to be informed.