



BUSINESS SCHOOL  
Te Kura Pakihi

DEPARTMENT OF INFORMATION SCIENCE

COMP210

Information Assurance

COURSE OUTLINE

Semester 2 2021

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## INFORMATION ASSURANCE – COMP210

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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

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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

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Name: Daniel Alencar da Costa (co-ordinator)  
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Email: [danielcalencar@otago.ac.nz](mailto:danielcalencar@otago.ac.nz)  
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 Email: [grant.dick@otago.ac.nz](mailto:grant.dick@otago.ac.nz)

## COURSE DELIVERY

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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 OWG34 - Owheo Building Seminar Room G.34
- Thursday lectures are held in OBSLGo4 - Otago Business School Seminar Room LG.04

**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

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### 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 40% (20/50) for the sum of both tests.
Assignment #1: Security Audit	August 27th	15%	
Assignment #2: Repaired System	October 15th	15%	
Test #1	August 23rd	25%	
Test #2	October 11th	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 Audit (15%)**

You will be given a project and will provide a security audit for that project. This is a group assignment.

### **Assignment #2: Repaired System (15%)**

Now that you have learned to find the vulnerabilities of the project, you will need to provide a proposal regarding how to repair the project. This is a group assignment.

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

Given that this paper does not have a final examination, your knowledge regarding the theoretical concepts and practical activities will be evaluated via two tests. These tests are individual and there is a requirement that ***you must score at least 40% (20 out of 50) for the sum of both tests to pass this paper.***

### **Course Requirements**

You must score at least 40% (20 out of 50) for the sum of tests 1 and 2 to pass this 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 prior to the assessment deadline.***

### **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

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### 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 0 470 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 <https://blackboard.otago.ac.nz/> 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

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Week	Commencing	Lecture	Topic	Assessment
28	Jul 12	1	Introduction to Information Assurance and Security	-
		2	Information Security Concepts and Roles	
29	Jul 19	3	Responsibilities, Threats, and Failures	In-lab Quiz (2%)
		4	Database/Application Security/Attack Demo (pt 1)	
30	Jul 26	5	Authentication: passwords/authorisation	In-lab Quiz (2%)
		6	Database/Application Security/Attack Demo (pt 2)	
31	Aug 2	7	Cryptography & Probability	In-lab Quiz (2%)
		8	Private- and Public-Key Cryptography	
32	Aug 9	9	Crypto Applications: e-mail, Web, cryptocurrency	In-lab Quiz (2%)

		10	Access Control: Techniques and Administration	
33	Aug 16	11	Malware	In-lab Quiz (2%)
		12	Ransomware	
34	Aug 23	13	Penetration Testing	Test #1 (25%) Assignment #1 (15%)
		14	Policies, Standards, and Practices	
35	Aug 30		Mid-Semester Break	
36	Sep 6	15	Attacks & Monitoring/Intrusion Detection	In-lab Quiz (2%)
		16	Cloud Computing & Security/Safety	
37	Sep 13	17	Electronic Forensics and Data Recovery	In-lab Quiz (2%)
		18	Business Resilience Planning & Physical Security	
38	Sep 20	19	Law & Ethics	In-lab Quiz (2%)
		20	Machine Learning, Autonomous Systems, AI	
39	Sep 27	21	Machine Learning, Autonomous Systems, AI (cont.)	In-lab Quiz (2%)
		22	Deep Fake	
40	Oct 4	23	Software Engineering for IA	In-lab Quiz (2%)
		24	Software Engineering for IA (cont.)	
41	Oct 11	25	Digital Preservation	Test #2 (25%) Assignment #2 (15%)
		26	Wrap-up	

Lectures end Friday 15 Oct 2021

The last test in on Monday 11 Oct; The last assignment is due Friday 15 Oct

## Student Learning Support and Information

### Student Charter

<http://www.otago.ac.nz/about/otago005275.html>

### Guidelines for Learning at Otago

<https://www.otago.ac.nz/hedc/otago616123.pdf>

<http://hedc.otago.ac.nz/hedc/learning/>

### Student Learning Centre

The Student Learning Centre, which is part of the Higher Education Development Centre, provides learning support, free of charge, to ALL enrolled students. Their services include:

- a workshop programme designed to help students to improve their learning strategies and their generic skills;
- individual assistance with learning issues;
- on-line study skills advice
- a student leadership programme
- a student-led peer support programme for students of all ages and backgrounds.
- conversational English groups for students from a non-English speaking background

The Centre also provides two very helpful study guides, “Guidelines for Writing and Editing” and “Writing University Assignments” and these are available on the SLC website. <http://slc.otago.ac.nz/>

### Library Support

The Library website <http://www.otago.ac.nz/library> provides access to resources and services, including group room bookings, library hours and locations, past exam papers, subject guides, article databases and more.

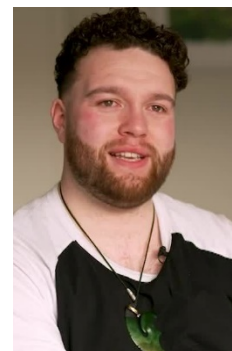
If you need assistance either check out the self-help guides <http://otago.libguides.com/selfhelp>, or ask Library staff at the ground floor service desks, or email [ask.library@otago.ac.nz](mailto:ask.library@otago.ac.nz)

### Kaiāwhina – Māori Student Support

Ko Te Atua o Taiehu te Mauka, Ko Ōtākou te Tai, Ko Ōtākou te Marae, Ko Kai Tahu , Taranaki ka iwi. Ko Taikawa Brett Taiaroa Karetai Tamati-Elliffe ahau.

Papaki kau ana ngā tai o mihi, ko Taikawa ahau. He wheako ōku kia poipoi, akiaki ia koutou nga taurira o Te Kura Pākihi.

Taikawa Tamati-Elliffe (Kai Tahu, Taranaki) is the Kaiāwhina Māori (Māori student support) for Te Kura Pākihi (Business School). He can help with questions about your academic studies as well as providing information on scholarships, pastoral, financial and other campus services. Taikawa also offers support to those studying away from their whanau, hapū and iwi, to feel safe and supported.



Tel: 03 479 5342

Email: [kaiarahi.obs@otago.ac.nz](mailto:kaiarahi.obs@otago.ac.nz) | [taikawa.tamati-elliffe@otago.ac.nz](mailto:taikawa.tamati-elliffe@otago.ac.nz)

### OBS Pacific Student Support Facilitator (Part-time)

Mary Jane’s role is to **liaise with** Academic Departments and Student Services relating to Pacific students and their course of study. Mary Jane is based in the Pacifica room on the **OBS Ground Floor**. As she works part time, it is best to email her to make an appointment.



Email: [mary-jane.kivalu@otago.ac.nz](mailto:mary-jane.kivalu@otago.ac.nz)



## Disability Information and Support

Students are encouraged to seek support if they are having difficulty with their studies due to disability, temporary or permanent impairment, injury or chronic illness. It is important to seek help early, through one of the contacts below:

Website: <http://www.otago.ac.nz/disabilities>

65 Albany St, West Lane, ISB, Student Services

Tel: +64 3 479 8235 Email: [disabilities@otago.ac.nz](mailto:disabilities@otago.ac.nz)

## Student Feedback

We encourage your feedback. This can be in the form of contacting staff, participating in course evaluation surveys, and communicating with class representatives. Continual improvements will be made to this course based in part on student feedback.

### Class Representatives

The class (or student) representative system is an avenue for encouraging communication and consultation between staff and students. It provides you with a vehicle for communicating your views on the teaching and delivery of the paper and provides staff with an opportunity to communicate information and gain constructive feedback from students. It contributes to the development of a sense of community within a department and it adds a further dimension to the range of support services offered to students.

Volunteers for the role of class representatives will be called early in the semester. The OUSA invites all class representatives to a training session, conducted by OUSA, about what it means to be a class representative and some of the possible procedures for dealing with issues that arise. They also provide information on the services that OUSA offers and the role OUSA can play in solving problems that may occur. The OUSA provides support to class representatives during the semester. Departmental staff will also meet with class representatives during the semester to discuss general issues or matters they wish to have considered.

Your class representative's name and contact details will be posted on Blackboard early in the semester.

### Concerns about the Course

We hope you will feel comfortable coming to talk to us if you have a concern about the course. The Course Co-ordinator will be happy to discuss any concerns you may have. Alternatively, you can report your concerns to the Class Representative who will follow up with departmental staff. If, after making approaches via these channels, you do not feel that your concerns have been addressed, there are University channels that may aid resolution. For further advice or more information on these, contact the departmental administrator or head of department.

## 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.**