Subject Outline

Subject Title	Information Security
Subject Code	CP3404
Credit Points	3
Study Period	SP53
Attendance Mode	Internal
Campus	JCU Singapore
Prerequisite/s	CP2414 OR CC3501 OR (18 CREDIT POINTS OF SUBJECTS INCLUDING CP1402)
Subject Coordinator/Division /College	Hossein Ghodosi College of Science & Engineering

At James Cook University, we acknowledge the Australian Aboriginal and Torres Strait Islander peoples of this nation. We acknowledge the Traditional Owners of the lands on which our campuses and study centres are located and where we conduct our business. We pay our respects to ancestors and Elders, past, present and future. JCU is committed to honouring Australian Aboriginal and Torres Strait Islander peoples' unique cultural and spiritual relationships to the land, waters and seas and their rich contribution to JCU and society.

Contents

This Subject Outline has been prepared by Hossein Ghodosi for the College of Science and Engineering, James Cook University. Updated 17/08/2023.

The information provided in this subject outline is correct as at the time of completion and may change in response to changing University resources. Any changes will be approved by the College Dean or representative and will be communicated to students by the LearnJCU subject site.

1 Subject details

1.1 Student participation requirements

The JCU Learning, Teaching and Assessment Procedures (2.1.2d) indicates a typical student workload for a **three (3) credit point subject** requires a **130 hour work load** of study related activities, including attendance, assessment and self-directed study over the duration of the subject with equivalency across all attendance modes.
Note that attendance at specified classes will be a mandatory requirement for satisfactory completion of some subjects (Learning, Teaching and Assessment Procedures, 3.1.8e) and that additional hours may be required per week for those students in need of **English language, numeracy** or **other learning support.**

Key subject activities	
On-campus > Lectures (20 hours)	Refer to JCU Timetable or your eStudent personal timetable
On-campus > Specialised (10 hours)	Refer to JCU Timetable or your eStudent personal timetable

For information regarding class registration, visit the Class Registration Schedule.

Learning and teaching activities may be recorded for this subject. Personal Information in the form of images and audio may be collected by JCU during the recording. This Personal Information may appear as part of the recording which is accessible to students and staff in this subject on LearnJCU.

1.2 Teaching Staff contact details

Teaching team	Staff member	Room	Phone	Email	Consultation times*
Subject Cordinator	Hossein Ghodosi	017-054A	47814617	hossein.ghodosi@jcu.edu.au	Arrange time via email
Lecturer	Petteri Kaskenpalo		+6580444848	petteri.kaskenpalo@jcu.adu.au	Arrange time via email
Learning Advisors	The Learning Centre	JCU Library		Online contact form	Visit Learning Advice Desk – JCU Library
Librarian	Your Liaison Librarian	JCU Library	n/a	Library contacts	

*Other consultation times by appointment only.

1.3 Subject description

This subject introduces current challenges in computer security and why security is difficult to achieve. It explores the importance of information security, and looks at the fundamental attacks (i.e. malware and social engineering attacks) including how to defend against them. It also covers the study of basic and

advance cryptography, mobile devices security, access control and identity management, compliance and operational security.

1.4 Subject learning outcomes and course learning outcomes

On successful completion of this subject, you will be able to:

- define information security, and describe the challenges of securing information
- describe different types of authentication services/credentials, and how awareness and training can provide increased security
- explain payloads of malware and types of social engineering psychological attacks
- explain the legal and ethical issues involved in information security
- describe symmetric/asymmetric cryptography, and evaluate the strengths of secure systems

These outcomes will contribute to your overall achievement of course learning outcomes.
The course learning outcomes that this subject contributes to are:

1. Critically analyse and synthesise knowledge of information technology systems and settings to identify information technology problems and to create solutions
2. Apply critical thinking and technical skills to independently identify creative solutions to a wide range of information technology problems

1.5 Student feedback on subject and teaching

Students are at the heart of JCU and as part of our commitment to improving the quality of our subjects and teaching, we regularly seek feedback on the JCU student experience.
YourJCU Surveys are available to all students through LearnJCU. You will receive an email invitation when the survey opens.

In response to previous student feedback and other data, the following enhancements to this subject have been made:

- Students enjoyed cryptanalyses of poly-alphabetic ciphers. Because of this, cryptanalyses of a mono-alphabetic cipher is also incorporated into the assignment.

1.6 Subject resources and special requirements

All subject readings and resources, including journal articles, book chapters, websites, videos, print and eTextbooks, are available to view online from your *Readings list* via your LearnJCU subject site.

Prescribed Texts:

- Mark Ciampa (2020), CompTIA Security + Guide to Network Security Fundamentals (Seventh Edition), Cengage Learning, USA. (URL: https://au.cengage.com/c/isbn/9780357424377/)

2 Assessment details

2.1 Key dates

Key dates	Date
Census date and Last date to withdraw without financial penalty	See Study Period and Census Dates
Last date to withdraw without academic penalty	See Study Period and Census Dates
Assessment item 1: Test/Quiz 1, 10%	Due: 5:00pm on 08/12/2023 – Week 5 of the study period
Assessment item 2: Assignment 1, 20%	Due: 5:00pm on 22/12/2023 – Week 7 of the study period
Assessment item 3: Assignment 2, 20%	Due: 5:00pm on 12/01/2024 – Week 10 of the study period
Assessment item 4: Examination, 50%	Due: University Examination period

2.2 Requirements for successful completion of this subject

In order to pass this subject, you must:

- Achieve an overall percentage of 50% or more

Final results for this subject will be graded as described in the Student Results Policy.

Supplementary examinations/supplementary assessments are available for this subject, in accordance with the Learning, Teaching and Assessment Procedure (3.2.10) and the Student Results Policy (2.1)

2.2.1 How do I track my progress in this subject?

Your marks on the assessment items is an indicator of how good is your progress in the subject. In this subject, the first assessment is the Test/Quiz that will be held in week 5 of the study period. A reasonable expectation is that your result on this item be significantly above the 50%. This is because it covers only a small portion of the materials that you will be assessed in the final exam. Note that the weight of Test/Quiz assessment is only 10% of the total mark assigned to this subject, and thus, a poor result on this assessment, does not mean that you cannot successfully pass the subject, but you may not pass the subject with a good result. The second and third assessment items, provide you the opportunity to not only be prepaired for the final exam, but also to secure a passing result for this subject. This in because in opposed to Test/Quiz and the Final exam, you are given considerably long time to provide your answer to these assessments.

Please note that teaching staff endeavour to provide helpful feedback on your assessed work promptly to be useful to your learning and continuing improvement. You must have reasonable expectations for how long this will take, especially for large classes. In most cases feedback will be provided within 15 University working days of the submission date (Learning, Teaching and Assessment Procedure, 3.5.2).

2.3 AccessAbility Services and Support

Reasonable adjustments may be made to assist you to manage additional circumstances impacting on your studies provided these do not change the academic integrity of a degree. Reasonable adjustments do not alter the need to be able to demonstrate the inherent requirements of the course.
If you believe you will experience challenges completing your degree or course because of a disability, health condition or other reason, you should discuss your concerns with AccessAbility Services.

Your course inherent requirements can be found here

2.4 Assessment items

ASSESSMENT ITEM 1: TEST/QUIZ	
Aligned subject learning outcomes	• define information security, and describe the challenges of securing information • explain payloads of malware and types of social engineering psychological attacks
Aligned professional standards/ competencies	• ACS Essential CBoK: ICT Management – Cyber Security
Group or individual	Individual assessment item
Weighting and due date	10% of the total mark available to this subject Due: 5:00pm on 08/12/2023 – Week 5 of the study period

ASSESSMENT ITEM 1: DESCRIPTION
This assessment contains a set of practical-type (explanation) questions, based on materials covered in weeks 1, 2, and 3.

ASSESSMENT ITEM 1: CRITERIA SHEET (OR RUBRIC)
Your answer to the questions must contain clear explanation and justification that demonstrates your knowledge about the topic under discussion. Partial mark counts.

ASSESSMENT ITEM 2: ASSIGNMENT 1	
Aligned subject learning outcomes	• define information security, and describe the challenges of securing information • explain the legal and ethical issues involved in information security • describe symmetric/asymmetric cryptography, and evaluate the strengths of secure systems
Aligned professional standards/ competencies	• ACS CBoK: ICT Professional Knowledge – Ethics, Professionalism • ACS CBoK: ICT Management – Cyber Security
Group or individual	Individual assessment item
Weighting and due date	20% of the total mark available to this subject Due: 5:00pm on 22/12/2023 – Week 7 of the study period

ASSESSMENT ITEM 2: DESCRIPTION

This assessment is a set of several tasks/problems that needs to be solved. Your solutions to the assignments must be your own work. You can consult with books and Internet, if you provide proper references. You may also discuss with other students, but you cannot copy their work.

ASSESSMENT ITEM 2: CRITERIA SHEET (OR RUBRIC)
Will be provided within the assignment.

ASSESSMENT ITEM 3: ASSIGNMENT 2	
Aligned subject learning outcomes	• define information security, and describe the challenges of securing information • explain the legal and ethical issues involved in information security • describe symmetric/asymmetric cryptography, and evaluate the strengths of secure systems
Aligned professional standards/ competencies	• ACS CBoK: ICT Professional Knowledge – Ethics, Professionalism • ACS CBoK: ICT Management – Cyber Security
Group or individual	Individual assessment item
Weighting and due date	20% of the total mark available to this subject Due: 5:00pm on 12/01/2024 – Week 10 of the study period

ASSESSMENT ITEM 3: DESCRIPTION

This assessment is a set of several tasks/problems that needs to be solved. Your solutions to the assignments must be your own work. You can consult with books and Internet, if you provide proper references. You may also discuss with other students, but you cannot copy their work.

ASSESSMENT ITEM 3: CRITERIA SHEET (OR RUBRIC)
Will be provided within the assignment

ASSESSMENT ITEM 4: EXAMINATION	
Aligned subject learning outcomes	• define information security, and describe the challenges of securing information • describe different types of authentication services/credentials, and how awareness and training can provide increased security • explain payloads of malware and types of social engineering psychological attacks • explain the legal and ethical issues involved in information security • describe symmetric/asymmetric cryptography, and evaluate the strengths of secure systems
Aligned professional standards/ competencies	• ACS CBoK: ICT Professional Knowledge – Ethics, Professionalism • ACS CBoK: ICT Management – Cyber Security
Group or individual	Individual assessment item
Weighting and due date	50% of the total mark available to this subject Due: University Examination period

ASSESSMENT ITEM 4: DESCRIPTION

The examination is a good opportunity to show your understanding of important concepts about the subject. The structure of this assessment is similar to the Test/Quiz, i.e., a collection of practical/assignment-type questions. This exam covers all materials taught in this subject.

ASSESSMENT ITEM 4: CRITERIA SHEET (OR RUBRIC)
Your answer to the questions must contain clear explanation and justification that demonstrates your knowledge about the topic under discussion. Partial mark counts.

3 Submission and return of assessment

3.1 Submission of assessment

The ability to adhere to deadlines is a highly desirable attribute that employers seek in our graduates. Right from the beginning, new students should acquire the habit of meeting deadlines for their work, by organising their study time appropriately.

3.2 Late submissions

The Learning, Teaching and Assessment Procedure (3.1.8d) outlines a uniform formula of penalties imposed for submission of an assessment item after the due date. This formula is 5% of the total possible marks for the assessment item per day including part-days, weekends, and public holidays. If submitted after 20 days, the assessment item thus would be awarded 0 marks (i.e. 5% x 20 = 100% of total possible marks in penalties). For assessment items weighted 0%, and submitted after 10 days a DNS (Did Not Submit) grade is awarded.

3.3 Special Consideration (including deferrals and extensions)

You are encouraged to access equity measures if you are affected by extenuating circumstances while undertaking the subject. JCU's Learning, Teaching and Assessment Procedure 3.1 requires that you must must make yourself available for assessments and examinations at the scheduled times and extensions or deferrals for an assessment item due to previously scheduled commitments such as weddings or holidays, will not be granted.

All Special Consideration requests can be applied for through the Special Consideration application form. The form is linked to the Special Consideration Procedure and also available on the Student Forms webpage.

3.4 Academic Integrity

As outlined in the Coursework Academic Integrity Policy and Procedure, you are are required to complete the Coursework Academic Integrity Modules available in your LearnJCU site. Penalties for non-completion may be applied.

All non-examination items of assessment are required to be submitted with the Assessment Declaration available through LearnJCU. The Assessment Declaration contains statements relating to academic integrity under the Coursework Academic Integrity Policy and Procedures. All instances of academic misconduct are treated very seriously by the University and students may be severely penalised for committing any form of academic misconduct.
For more information regarding academic integrity, see
https://www.jcu.edu.au/students/learningcentre/academic-integrity

3.5 Return of assessment

The requirements for an assessment's return date, time and manner will be determined by the Subject Coordinator in line with the JCU Learning, Teaching and Assessment Procedures.
Feedback will be given, as per clause 3.5 of the Learning, Teaching and Assessment Procedures. You will be informed of your grade for every component of assessment as per clause 3.5.1 and 3.5.2 of the Learning, Teaching and Assessment Procedures. You can also request written or verbal feedback from the marker (see Learning, Teaching and Assessment Procedures 3.5).

3.6 Review of assessment

Assessment items and final grades will be reviewed through moderation processes (Learning, Teaching and Assessment Procedures, 3.6). It is important to be aware that assessment results "must always undergo final ratification for each study period. No single grade or mark represents a final result in a subject" (Learning, Teaching and Assessment Procedures, 3.7.4.).

Assessment in this subject may involve the use of proctoring tools such as Respondus with camera surveillance or webcams.
Respondus can record an assessment attempt, and that recording will be used for the investigation of cheating or any other conduct which may contravene JCU Policies and Procedures. Footage will only be accessed by persons authorised by the University to do so and may be shared with internal or external investigators. The footage constitutes Personal Information and will be stored and accessed in accordance with JCU's Information Privacy Policy.

Audio and/or video recording of assessment (e.g. oral assessment) may be used in this subject as per the Learning Teaching and Assessment Procedure (3.1.5f) and will be securely stored in line with Learning Teaching and Assessment Procedure (3.8.1).

Students can seek a review of individual assessment pieces through the process identified in clause 3.8 of the Learning, Teaching and Assessment Procedures.

Students can seek a review of the final subject result through the process contained in the Review and Appeal of a Final Subject Result Procedure.

4 Learning and teaching in this subject

4.1 Subject calendar

Please note, the sequence of some topics may change due to staff availability, resourcing, or due to unforeseen circumstances. Please monitor announcements made via LearnJCU.

Week/Module and date		Lecture/Topic	Practical	Readings/ Preparation	Relationship to Assessment
1		Security Fundamentals I	Practical 1	Module 1 of the textbook	Test, Assignments, and Examination
2		Security Fundamentals II	Practical 2	Module 2 of the textbook	Test, Assignments, and Examination
3		Endpoint Security I	Practical 3	Modules 3 and 4 of the textbook	Test, Assignments, and Examination
4		Endpoint Security II	Practical 4	Ch. 3 of Whitman Module 5 of the textbook	Assignments and Examination
5		Cryptography I	Test/Quiz + Practical 5	Module 6 of the textbook	Assignments and Examination
LR	**LECTURE RECESS**				
6		Cryptography II	Practical 6	Module 7 of the textbook	Assignments and Examination
7		Enterprize Security I	Practical 7	Module 12 of the textbook	Assignments and Examination
8		Enterprize Security II	Practical 8	Module 13 of the textbook	Assignment and Examination
9		Enterprize Security III	Practical 9	Module 14 of the textbook	Assignment and Examination
10		Enterprize Security IV	Practical 10	Module 15 of the textbook	Assignment and Examination

4.2 Learning and teaching activities/expectations

Attendance in the lecture and tutorial/practical sesstions. Study/Review materials (i.e. lecture slides and practical questions) prior to attending in lecture/practical sessions. Provide answer to practical questions before seeing the answers that are available in the practice.