Subject Outline



Subject Title	Network Security
Subject Code	CP2414
Credit Points	3
Study Period	SP53
Attendance Mode	Internal
Campus	Singapore
Prerequisite/s	CP1402 OR ADMISSION TO BACHELOR OF BUSINESS (20510) and 3 credit points of CP subjects
Subject Coordinator/Division /College	Zhigang Lu 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.

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This Subject Outline has been prepared by Mr Hari Krishnan for the College of Science and Engineering, James Cook University. Updated 18 October 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 <u>Learning</u>, <u>Teaching and Assessment Procedures</u> (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 (<u>Learning, Teaching and Assessment Procedures</u>, 3.1.8e) and that additional hours <u>may</u> be required per week for those students in need of **English language, numeracy** or **other learning support.**

Key subject activities				
On-campus > Seminars (20 hours)	Refer to class timing via the Timetable service from StudentFirst - https://secure.jcu.edu.sg/StudentFirst/			
Online > Online activity (10 hours)	Refer to class timing via the Timetable service from StudentFirst - https://secure.jcu.edu.sg/StudentFirst/			
On-campus > Specialised (20 hours)	Refer to class timing via the Timetable service from StudentFirst - https://secure.jcu.edu.sg/StudentFirst/			

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 Coordinator	Zhigang Lu		-	zhigang.lu@jcu.edu.au	
Lecturer	Hari Krishnan		-	hari.krishnan@jcu.edu.au	By appointment
Tutor	Hari Krishnan		-	hari.krishnan@jcu.edu.au	By appointment
Learning Advisors	JCU Singapore Learning Centre	C1-12B	n/a	learningcentre- singapore@jcu.edu.au	By email
Librarian	JCUS Library	C1-08	n/a	library-singapore@jcu.edu.au	By email

^{*}Other consultation times by appointment only.

1.3 Subject description

This subject introduces students to network security protocols and technologies. Students will gain knowledge of cryptography and authentication, and learn to identify and defend against security

threats. Students will gain experience in establishing and maintaining secure information and communication systems

1.4 Subject learning outcomes and course learning outcomes

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

- Describe symmetric and public-key cryptography systems
- Explain how cryptography and security protocols are used to establish authentication and confidentiality
- Identify the threats posed to information systems by malicious software and intruders
- Plan, implement and configure secure information and communication systems

These outcomes will contribute to your overall achievement of course learning outcomes.

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 <u>LearnJCU</u>. 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:

- Practicals have been updated to make it more suitable for online learning.
- Assignments have been redesigned.
- Teaching materials have been updated accordingly.

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.

1.6.1 Prescribed Text

Network Security Essentials: Applications and Standards, Global Edition (6e), William Stallings, Pearson, 2018, ISBN-9781292154855

Textbooks are available to purchase online through Pearson online store. The JCU Library has limited copies of all prescribed textbooks available for 2-day loans.

Other related digital resources and online materials (eg. YouTube videos, websites) will be provided on LearnJCU.

1.6.2 VirtualBox for practical work

As part of the subject, tutorials will include working with a *Virtual Machine* containing software used for teaching. It is recommended that students prepare for this by installing VirtualBox (https://www.virtualbox.org/) onto their personal laptop/PC in advance. The Virtual Machine image will be made available in advance of the relevant tutorials, so that students can attempt to import it and

report any issues early. Students with computers unable to run the VMs (due to system specifications or CPU architecture, like Mac M-series CPUs) may need to use lab computers instead or some other alternative. The lecturer will coordinate with IT services to provide these when needed.

2 Assessment details

2.1 Key dates

Key dates	Date
Census date and Last date to withdraw without financial penalty	See 2023 JCUS Study Period and Census Dates
Last date to withdraw without academic penalty	See 2023 JCUS Study Period and Census Dates

	Method	Percentage	Group or Individual	Description	Due Date
ASSESSIMENTS	Assessment item 1: Practical assessment/practical skills demonstration - (Performance/Practice /Product)	30 %	Individual	Practicals	Due: Weekly
	Assessment item 2: Case study analysis - (Written)	20 %	Individual	Case Study – Part 1	Due: 11.59PM, Sunday 10 Dec 23
	Assessment item 3: Case study analysis – (Written)	20 %	Individual	Case Study – Part 2	Due: 11:59PM, Sunday 14 Jan 24
	Assessment item 4: Examination (centrally Administered) – (Written)	30 %	Individual		Due: Examination Period, see the JCUS exam timetable

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 <u>Student Results Policy</u>.

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

2.2.1 How do I track my progress in this subject?

As part of the subject, tutorials will include working with a *Virtual Machine* containing software used for teaching. It is recommended that students prepare for this by installing VirtualBox

(https://www.virtualbox.org/) onto their personal laptop/PC in advance. The Virtual Machine image will be made available in advance of the relevant tutorials, so that students can attempt to import it and report any issues early. Students with computers unable to run the VMs (due to system specifications or CPU architecture, like Mac M-series CPUs) may need to use lab computers instead or some other alternative. The lecturer will coordinate with IT services to provide these when needed.

You will be given feedback as appropriate for practicals and assignments. You should also consider that your weekly preparation and practice will provide a good guide to how well you are progressing with the subject. Please carefully consider the feedback that you receive as guidance to help with your learning. It's not about getting marks, it's about getting better. If you do not get "full marks", then this means you have more to learn which is the point to University education, so consider what you need to change in terms of your study habits and the skills required for the subject. Note that rubrics used for assessment provide you with feedback about relevant criteria. In some cases, you will receive additional comments about criteria, but the rubric choice is often sufficient to explain your result and the standard of your work. You are welcome to ask teaching staff for further feedback within reason.

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 fill up the Accessibility Intake form (click Forms for Prospective Students to locate this) and submit to the relevant Student Ambassador at JCUS who will be in touch with you.

Your course inherent requirements can be found here:

- BCyber: https://www.jcu.edu.au/inherent-requirements/bachelor-of-cybersecurity
- BIT: https://www.jcu.edu.au/inherent-requirements/bachelor-of-information-technology-inherent-Requirements

2.4 Assessment items

ASSESSMENT ITEM 1: EX	AMINATION (CENTRALLY ADMINISTERED)			
	SLO 1: Describe symmetric and public-key cryptography systems			
Aligned subject learning	SLO 2: Explain how cryptography and security protocols are used to establish authentication and confidentiality			
outcomes	SLO 3: Identify the threats posed to information systems by malicious software and intruders			
	SLO 4: Plan, implement and configure secure information and communication systems			
	ACS CBoK: ICT Professional Knowledge - Professionalism			
Aligned professional standards/ competencies	ACS CBoK: Technology Resources – Networking			
our composition of	ACS CBoK: ICT Management - Cyber Security			
Group or individual	Practical assessment/practical skills demonstration - (Performance/Practice/Product)			
Weighting and due date	30%, Weekly			

ASSESSMENT ITEM 1: DESCRIPTION

Assessment Item 1 includes weekly Practical submission via LearnJCU for both computer-based and theory-based workshops. Practicals and quizzes commence in week 1 and finish in week 10 (10 total).

ASSESSMENT ITEM 1: CRITERIA SHEET (OR RUBRIC)

Students will be marked for each weekly quiz as follows:

0 – incorrect answer

1 – correct answer

ASSESSMENT ITEM 2: CA	SE STUDY ANALYSIS
Aligned subject learning outcomes	 SLO 3: Identify the threats posed to information systems by malicious software and intruders SLO 4: Plan, implement, and configure secure information and communication systems
Aligned professional standards/ competencies	ACS CBoK: ICT Professional Knowledge - Professionalism ACS CBoK: Technology Resources - Networking ACS CBoK: ICT Management - Cyber Security
Group or individual	Individual assessment item – Case Study Analysis (Written)
Weighting and due date	20 %, 11:59 PM Sunday, 10 Dec 23

ASSESSMENT ITEM 2: DESCRIPTION

Given a networking scenario for a small organisation, write a report that:

- a) identifies and analyses application and networking-based threats to the organisation;
- b) recommends administration strategies and networking technologies to mitigate against intruders and attacks on the network

ASSESSMENT ITEM 2: CRITERIA SHEET (OR RUBRIC)

Part	Criteria	Exemplary (9, 10)	Good (7, 8)	Satisfactory (5, 6)	Limited (2, 3, 4)	Very Limited (0, 1)		
Part I. Potential Threats	Potential Threats Identification of Threats (10%)	Comprehensive identification of relevant threats given the provided scenario.	Exhibits aspects of exemplary (left) and satisfactory (right)	to the network, misses some relevant threats or includes some that are irrelevant. Sufficiently clear and accurate explanation of potential outcomes, with some minor lapses in accuracy or clarity. Recommended strategies echnologies are eive, feasible, and gly justified. Provides ed and clear discussion explanation of potential outcomes, with some minor lapses in accuracy or clarity. Recommended strategies and technologies are considered effective and feasible, and sufficient justification is given. Exhibits To the network, misses some relevant threats or includes some that are irrelevant. Sufficiently clear and accurate explanation of potential outcomes, with some minor lapses in accuracy or clarity. Recommended strategies and technologies are considered effective and feasible, and sufficient detailed and elamontation. Exhibits		to the network, misses some relevant threats or includes	No relevant threa identified.	No relevant threats identified.
	Threat analysis (20%)	Clear and accurate explanation of potential outcomes of attacks against the network.			explanation of potential outcomes, with some minor		Analysis is generally inaccurate or incomprehensible.	
	Recommendations (20%)	Recommended strategies and technologies are effective, feasible, and strongly justified. Provides detailed and clear discussion of implementation.			Exhibits aspects of	Recommendations are ineffective. Discussion of implementation is missing or incomprehensible.		
Part II Firewall Planning and Design	Firewall, Honeypot, Network Security Technologies, and other devices Diagram and Labels (20%)	Diagram is accurate and includes: 1. firewall/s 2. all relevant devices 3. Other Network Security Technologies (hardware/software) 4. honeypot/s 5. lines 6. labels		Diagram is considered accurate and at least half of the following are satisfactory: 1. firewall/s 2. all relevant devices 3. Other Network Security Technologies (hardware/software) 4. honeypot/s 5. lines 6. labels	satisfactory (left) and very limited (right)	Negligible attempt or none done.		
Part II Firewall	Analysis and Recommendation – Firewall, Honeypot, Network Security Technologies (30%)	Clear and accurate explanation of the proposed configuration of type/s of firewall, honeypot/s, network security technologies, their placements and why are they chosen.		Sufficiently clear and accurate explanation of the proposed configuration of type/s of firewall, honeypot/s, network security technologies, their placements and why are they chosen.		Negligible attempt or analysis is generally inaccurate or incomprehensible.		

ASSESSMENT ITEM 3: CA	SE STUDY ANALYSIS
	SLO 2: Explain how cryptography and security protocols are used to establish authentication and confidentiality
Aligned subject learning outcomes	SLO 3: Identify the threats posed to information systems by malicious software and intruders
	SLO 4: Plan, implement, and configure secure information and communication systems
	ACS CBoK: ICT Professional Knowledge - Professionalism
Aligned professional standards/ competencies	ACS CBoK: Technology Resources - Networking
	ACS CBoK: ICT Management - Cyber Security
Group or individual	Individual assessment item – Case Study Analysis (Written)
Weighting and due date	20%, 11:59PM Sunday, 14 Jan 24

ASSESSMENT ITEM 3: DESCRIPTION

Scenario: a company has accrued a great quantity of valuable data and the CEO has begun to take security more seriously. The company has plans to license its data to others. Prepare a report to the CEO that:

- a) explains how cryptography can keep the company's data secure;
- b) describes cryptographic keys and user authentication;
- c) explores secure cloud computing for handling the company's data.

ASSESSMENT ITEM 3: CRITERIA SHEET (OR RUBRIC)

Part	Criteria	Exemplary	Good	Satisfactory		Very Limited
	0.110114	(9, 10)	(7, 8)	(5, 6)	(2, 3, 4)	(0, 1)
Part I Kerberos and User Authentication	Kerberos and User Authenticati on (15%)	1. Kerberos is extremely well-explained. The explanation contains the following: a. Why Kerberos should be chosen for this purpose? b. Does Kerberos use symmetric cryptography? Explain. c. How does Kerberos authenticate each client? You may discuss Kerberos Ticket-Granting Server (TGS) and Ticket Granting Ticket (TGT). d. How does Kerberos tackle the problemof replay attacks?		1. Kerberos is reasonably explained. The explanation contains the following a. Why Kerberos should be chosen for this purpose? b. Does Kerberos use symmetric or asymmetric cryptography? Explain. c. How does Kerberos authenticate eachclient? You may discuss Kerberos Ticket-Granting Server (TGS) and Ticket Granting Ticket (TGT). d. How does Kerberos tackle the problemof replay attacks?		
Part II Secure Cloud Computing and Explore Secure Cloud Computing for Handling the Company's Data	Secure Cloud Computing (25%)	1. Extremely well-explained the following: a. Explain the possibility of employing Cloud Computing(CC) for the company's valuable data. b. What Cloud Computing service/s can be used for the data? And how?	Exhibits aspects of exemplary (left) and satisfactory (right)	I. Reasonably explained the following: a. Explain the possibility of employing Cloud Computing(CC) for the company's valuable data. b. What Cloud Computing service/s can be used for the data? And how?	Exhibits aspects of satisfacto ry (left) andvery	Negligible attempt, nonsensical, or not done.
Part II Secure Cloud Computing Handling th	Explore Secure Cloud Computing for Handling the Company's data -Cloud Computing Recommenda tion (20%)	Computing is recommended to		1. State whether Cloud Computing is recommended to be used with the company's valuable data. IF it is recommended, what kind CC service/s is recommended 2. Your recommendation is reasonablyjustified.	andvery limited (right)	
Part III Network Diagram employing Kerberos and CloudComputing for Perth Branch	Kerberos, CC service and other devices Diagram and Labels (15%)	ı. Kerberos	Exhibits aspects of exemplary (left) and satisfactory (right)	Diagram is considered accurate and at least half of the following are satisfactory: 1. Kerberos 2. CC service 3. all relevant devices 4. lines 5. labels	· ,	Negligible attempt, nonsensical, or not done.

	tion - Kerberos, CC service	to therollowing duestions:	Sufficiently clear and accurate explanation to the following questions: 1. Why each of the devices/Software/CC is placed where it is placed in the diagram? 2. What are the purposes and advantages of placing it there?	
Part IVCitation	Citation and referencing (5%)	Excellent citing and excellent use of IEEE style	Correct citing and correct use of IEEE style.	

ASSESSMENT ITEM 4: EX	AMINATION			
	SLO 1: Describe symmetric and public-key cryptography systems			
	SLO 2: Explain how cryptography and security protocols are used to establish			
Aligned subject learning	authentication and confidentiality			
outcomes	SLO 3: Identify the threats posed to information systems by malicious software and intruders			
	SLO 4: Plan, implement, and configure secure information and communication systems			
	ACS CBoK: ICT Professional Knowledge - Professionalism			
Aligned professional standards/ competencies	ACS CBoK: Technology Resources - Networking			
Standards, competences	ACS CBoK: ICT Management - Cyber Security			
Group or Individual	Individual			
Weighting and due date	30%, During Examination Period. See the <u>JCU exam timetable</u> .			
Duration	2.5 hours			
See Learning Teaching and Assessment Policy Learning Teaching and Assessment Procedure, Special Consideration				

See <u>Learning</u>, <u>Teaching and Assessment Policy</u>, <u>Learning</u>, <u>Teaching and Assessment Procedure</u>, <u>Special Consideration</u>
<u>Procedure</u>, <u>Examinations Procedure</u>

ASSESSMENT ITEM 4: DESCRIPTION

You will be required to complete a 2.5 hour end of teaching period exam during the University's exam period. The University will determine the date and time of the final exam and will provide exam timetables towards the end of the teaching period.

The exam will cover all materials from the entire subject (unless otherwise stated in class). Exam questions will include multiple choice questions and direct-answer questions.

ASSESSMENT ITEM 4: CRITERIA SHEET (OR RUBRIC)

Marks are given for correct answers, and may be deducted for incorrect answers. Answers to direct-answer questions can earn part marks for partially correct answers.

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. The following points apply to the submission of assessment: All assessment in this subject must be submitted to the via the LearnJCU subject site according to any provided instructions.

3.2 Late submissions

The <u>Learning, Teaching and Assessment Procedure</u> (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. $5\% \times 20 = 100\%$ 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 <u>Learning</u>, <u>Teaching and Assessment Procedure</u> 3.1 requires that you 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 <u>Special Consideration Procedure</u> and also available on the <u>Student Forms</u> webpage.

3.4 Academic Integrity

As outlined in the Coursework Academic Integrity <u>Policy</u> and <u>Procedure</u>, you 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.sg/current-students/student-support-services/learning-support/academic-integrity-at-james-cook-university-singapore

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 <u>Learning</u>, <u>Teaching and Assessment Procedures</u>.

Feedback will be given, as per clause 3.5 of the <u>Learning</u>, <u>Teaching and Assessment Procedures</u>. You will be informed of your grade for every component of assessment as per clause 3.5.1 and 3.5.2 of the <u>Learning</u>, <u>Teaching and Assessment Procedures</u>. 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 (<u>Learning</u>, <u>Teaching</u> <u>and Assessment Procedures</u>, 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" (<u>Learning</u>, <u>Teaching</u> and <u>Assessment Procedures</u>, 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 <u>Review and Appeal of a Final Subject Result Procedure.</u>

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.

Module/Week		Lecture	Specialised content	Readings/Preparation	Relationship to assessment		
1	6 Nov 23	Introduction, Application and Networking-based Attacks	Webserver Attack	Chapter 1, Supplementary notes	Exam, Assessment Item 2		
2	13 Nov 23	Administering Secure Networks Variable- Length Subnet Mask (VLSM)	Networking Attack	Supplementary notes	Exam, Assessment Item 2		
3	20 Nov 23	Intruders and Firewalls	Administrating Secure Networks	Chapters 11, 12	Exam, Assessment Item 2		
4	27 Nov 23	Symmetric Encryption	Intruders & Firewalls	Chapter 2	Exam		
5	4 Dec 23	Public-Key Cryptography Blockchain technology	Symmetric Encryption	Chapter 3 Supplementary notes	Exam, Assessment Item 3		
SP		STUDY PERIOD					
6	11 Dec 23	Key Management and User Authentication	Public-Key Cryptography and the Blockchain	Chapter 4	Exam, Assessment Item 3		
7	18 Dec 23	Network Access Control and Cloud Security	Key Management and User Authentication	Chapter 5	Exam, Assessment Item 3		
8	25 Dec 23	Transport-Level Security	Network Access Control and Cloud Security	Chapter 6	Exam		
9	1 Jan 24	Wireless Network Security	Assignment Help	Chapter 7	Exam		
10	8 Jan 24	Revision	Revision		Exam		
sv		STUDY VACATION.					



4.2 Learning and teaching activities/expectations

This subject uses a combination of approaches to teaching and learning, including both student centred, and teacher directed approaches. The content of the subject is disseminated using a variety of teaching strategies including practicals, group work, case studies, discussions, simulations, and readings. At the beginning of each practical, you will be made aware of the expected learning outcomes, how such outcomes are relevant to the world of business, and the resources that support the learning outcomes of this subject.

You are expected to be an active participant in the learning process and are expected to participate in workshops and undertake weekly readings. This subject has a two-hour lecture and a three-hour practical (starting from Week 1 to Week 10).

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 Learn JCU.

Working links to the following policies:

- o Learning, Teaching and Assessment Policy
- o Learning Teaching and Assessment Procedures
- o Special Consideration Procedures
- o Student Code of Conduct
- o Student Results Policy and the Finalisation and Publication of Student Results Procedure