

In Progress

Please note that this Unit Profile is still in progress. The content below is subject to change.



COIT20246 *Networking and Cyber Security*

Term 2 - 2024

Profile information current as at 16/05/2024 07:44 am

All details in this unit profile for COIT20246 have been officially approved by CQUniversity and represent a learning partnership between the University and you (our student). The information will not be changed unless absolutely necessary and any change will be clearly indicated by an approved correction included in the profile.

General Information

Overview

In this unit, you will learn how Information and Communications Technology (ICT) infrastructure supports the operation of modern organisations. You will investigate the structure of the Internet, design wired and wireless networks, and deploy applications using virtualisation and cloud computing. You will discover mechanisms for securing ICT infrastructure and applications by studying the motivation of attackers and the common vulnerabilities they exploit. You will also learn frameworks and tools organisations use to manage cloud infrastructure, reduce cyber security risks, and deliver IT services to customers. As you explore cyber security and Internet technologies via hands-on laboratory tasks, you will reflect on the impact of those technologies on society, and your responsibilities as a future ICT professional. This unit gives you the broad knowledge of networking and cyber security that all ICT professionals require and is a starting point for a career as a cyber security analyst, cloud engineer, or network operations specialist.

Details

Career Level: *Postgraduate*

Unit Level: *Level 8*

Credit Points: 6

Student Contribution Band: 8

Fraction of Full-Time Student Load: 0.125

Pre-requisites or Co-requisites

There are no requisites for this unit.

Important note: Students enrolled in a subsequent unit who failed their pre-requisite unit, should drop the subsequent unit before the census date or within 10 working days of Fail grade notification. Students who do not drop the unit in this timeframe cannot later drop the unit without academic and financial liability. See details in the [Assessment Policy and Procedure \(Higher Education Coursework\)](#).

Offerings For Term 2 - 2024

- Brisbane
- Melbourne
- Online
- Rockhampton
- Sydney

Attendance Requirements

All on-campus students are expected to attend scheduled classes – in some units, these classes are identified as a mandatory (pass/fail) component and attendance is compulsory. International students, on a student visa, must maintain a full time study load and meet both attendance and academic progress requirements in each study period (satisfactory attendance for International students is defined as maintaining at least an 80% attendance record).

Website

[This unit has a website, within the Moodle system, which is available two weeks before the start of term. It is important that you visit your Moodle site throughout the term. Please visit Moodle for more information.](#)

Class and Assessment Overview

Recommended Student Time Commitment

Each 6-credit Postgraduate unit at CQUniversity requires an overall time commitment of an average of 12.5 hours of study per week, making a total of 150 hours for the unit.

Class Timetable

[Regional Campuses](#)

Bundaberg, Cairns, Emerald, Gladstone, Mackay, Rockhampton, Townsville

[Metropolitan Campuses](#)

Adelaide, Brisbane, Melbourne, Perth, Sydney

Assessment Overview

1. **Online Quiz(zes)**

Weighting: 35%

2. **Learning logs / diaries / Journal / log books**

Weighting: 35%

3. **Project (applied)**

Weighting: 30%

Assessment Grading

This is a graded unit: your overall grade will be calculated from the marks or grades for each assessment task, based on the relative weightings shown in the table above. You must obtain an overall mark for the unit of at least 50%, or an overall grade of 'pass' in order to pass the unit. If any 'pass/fail' tasks are shown in the table above they must also be completed successfully ('pass' grade). You must also meet any minimum mark requirements specified for a particular assessment task, as detailed in the 'assessment task' section (note that in some instances, the minimum mark for a task may be greater than 50%). Consult the [University's Grades and Results Policy](#) for more details of interim results and final grades.

CQUniversity Policies

All University policies are available on the [CQUniversity Policy site](#).

You may wish to view these policies:

- Grades and Results Policy
- Assessment Policy and Procedure (Higher Education Coursework)
- Review of Grade Procedure
- Student Academic Integrity Policy and Procedure
- Monitoring Academic Progress (MAP) Policy and Procedure – Domestic Students
- Monitoring Academic Progress (MAP) Policy and Procedure – International Students
- Student Refund and Credit Balance Policy and Procedure
- Student Feedback – Compliments and Complaints Policy and Procedure
- Information and Communications Technology Acceptable Use Policy and Procedure

This list is not an exhaustive list of all University policies. The full list of University policies are available on the [CQUniversity Policy site](#).

Previous Student Feedback

Feedback, Recommendations and Responses

Every unit is reviewed for enhancement each year. At the most recent review, the following staff and student feedback items were identified and recommendations were made.

Feedback from Student evaluations and informal student feedback

Feedback

Students felt overwhelmed by the tutorial tasks plus regular deadlines for assessment activities.

Recommendation

Reduce the number of online quizzes, as well as the weight of draft assessments (e.g. draft journal), and provide additional guidance on amount of effort required for each task (e.g. identify what is to be included in journal for each tutorial task).

Feedback from Informal student feedback

Feedback

Some students from a non-technical background found the assessments difficult.

Recommendation

Review the assessment instructions for clarity (e.g. avoid too many technical terms, add cross-references to unit material), and provide additional videos that step through the assessments as well as demonstrate key concepts needed for the assessments.

Feedback from Teaching team feedback

Feedback

The group project was challenging, both in forming groups and ensuring team members made sufficient contributions.

Recommendation

Allocate time in tutorial classes for group formation and work on the group project, and investigate methods to encourage and monitor contributions from all team members.

Feedback from Teaching team feedback

Feedback

Project marking criteria did not provide students with enough guidance of expectations.

Recommendation

Revise the project marking criteria to include more examples of expectations at a wider range of levels (e.g. Excellent, Good, Poor).

Unit Learning Outcomes

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

1. Investigate the role of ICT infrastructure, such as computer hardware, operating systems, virtualisation, and networks, in providing Internet applications and cloud services
2. Recommend cyber security controls to prevent and detect attacks and vulnerabilities
3. Apply standards and industry best practices to manage networks, ICT services, and cyber security
4. Summarise key professional, social and legal issues relating to the Internet, cloud computing, and cyber security.

The Australian Computer Society (ACS), the professional association for Australia's ICT sector, recognises the Skills Framework for the Information Age (SFIA). SFIA is adopted by organisations, governments, and individuals in many countries and provides a widely used and consistent definition of ICT skills. SFIA is increasingly being used when developing job descriptions and role profiles. ACS members can use the tool [MySFIA](#) to build a skills profile.

This unit contributes to the following workplace skills as defined by [SFIA 8](#) (the SFIA code is included):

- IT Infrastructure (ITOP)
- Network Design (NTDS)
- Network Support (NTAS)
- Information Security (SCTY)
- Security Operations (SCAD)
- Problem Management (PBMG)
- Service Level Management (SLMO)
- Change Control (CHMG)

The National Initiative for Cybersecurity Education ([NICE](#)) Framework defines knowledge, skills and tasks needed to perform various cyber security roles. Developed by the National Institute of Standards and Technology (NIST), the NICE Framework is used by organisations to plan their workforce, including recruit into cyber security positions.

This unit helps prepare you for roles such as Systems Security Analyst, Network Operations Specialist and Systems Administrator, contributing to the following knowledge and skills:

- K0001 Knowledge of computer networking concepts and protocols, and network security methodologies.
- K0002 Knowledge of risk management processes (e.g., methods for assessing and mitigating risk).
- K0004 Knowledge of cybersecurity and privacy principles.
- K0005 Knowledge of cyber threats and vulnerabilities.
- K0040 Knowledge of vulnerability information dissemination sources (e.g., alerts, advisories, errata, and bulletins).
- K0044 Knowledge of cybersecurity and privacy principles and organizational requirements (relevant to confidentiality, integrity, availability, authentication, non-repudiation).
- K0060 Knowledge of operating systems.
- K0061 Knowledge of how traffic flows across the network (e.g., Transmission Control Protocol [TCP] and Internet Protocol [IP], Open System Interconnection Model [OSI], Information Technology Infrastructure Library, current version [ITIL]).
- K0108 Knowledge of concepts, terminology, and operations of a wide range of communications media (computer and telephone networks, satellite, fiber, wireless).
- K0111 Knowledge of network tools (e.g., ping, traceroute, nslookup)
- K0130 Knowledge of virtualization technologies and virtual machine development and maintenance.
- K0138 Knowledge of Wi-Fi.
- K0160 Knowledge of the common attack vectors on the network layer.
- K0200 Knowledge of service management concepts for networks and related standards (e.g., Information Technology Infrastructure Library, current version [ITIL]).
- K0318 Knowledge of operating system command-line tools.
- S0033 Skill in diagnosing connectivity problems.
- S0073 Skill in using virtual machines. (e.g., Microsoft Hyper-V, VMWare vSphere, Citrix XenDesktop/Server, Amazon Elastic Compute Cloud, etc.).



Alignment of Learning Outcomes, Assessment and Graduate Attributes

 N/A Level	 Introductory Level	 Intermediate Level	 Graduate Level	 Professional Level	 Advanced Level
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Alignment of Assessment Tasks to Learning Outcomes

Assessment Tasks	Learning Outcomes			
	1	2	3	4
1 - Online Quiz(zes) - 35%	•	•	•	
2 - Learning logs / diaries / Journal / log books - 35%	•	•		•
3 - Project (applied) - 30%			•	•

Alignment of Graduate Attributes to Learning Outcomes

Graduate Attributes	Learning Outcomes			
	1	2	3	4
1 - Knowledge				
2 - Communication				
3 - Cognitive, technical and creative skills				
4 - Research				
5 - Self-management				
6 - Ethical and Professional Responsibility				
7 - Leadership				
8 - Aboriginal and Torres Strait Islander Cultures				

Textbooks and Resources

Information for Textbooks and Resources has not been released yet.

This information will be available on Monday 17 June 2024

Academic Integrity Statement

Information for Academic Integrity Statement has not been released yet.

This unit profile has not yet been finalised.