

# COIT20264 *Enterprise and Cloud Networking*

## Term 2 - 2025

Profile information current as at 08/06/2026 03:15 pm

All details in this unit profile for COIT20264 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

This unit equips you with the skills and knowledge necessary to design enterprise-level networks utilising the latest on-premises, wireless, and cloud networking technologies. It also provides you with the ability to gather business and technical requirements, as well as to justify the selection of network technologies when there are conflicting requirements, such as cost, performance, security, and business goals. The unit includes the application of industry-grade tools and techniques in network design, deployment, and management, including automation, remote access, high availability, testing, and documentation.

#### Details

Career Level: *Postgraduate*

Unit Level: *Level 9*

Credit Points: 6

Student Contribution Band: 8

Fraction of Full-Time Student Load: 0.125

#### Pre-requisites or Co-requisites

Prerequisite: COIT20261 Network Routing and Switching

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 - 2025

- 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. Written Assessment

Weighting: 30%

#### 2. Portfolio

Weighting: 20%

#### 3. Written Assessment

Weighting: 50%

### 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 Feedback

##### Feedback

Insufficient interactions in the lectures.

##### Recommendation

Develop interactive activities, such as checkpoint questions, to enhance student interaction during online lectures.

#### Feedback from Unit Coordinator's Reflection

##### Feedback

Integrate advanced cloud computing practices to facilitate capstone projects.

##### Recommendation

Develop and integrate practical cloud computing practices (web server, email server, and Azure Active Directory service) within this unit.

## Unit Learning Outcomes

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

1. Analyse business and technical requirements to create plans and designs for enterprise networks
2. Justify the selection of network technologies when there are conflicting requirements, such as cost, performance, security and business goals
3. Design networks comprising a range of technologies, including on-premise, wireless and cloud
4. Apply industry-grade tools and techniques when designing, deploying and managing networks, including automation, remote access and high availability.

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:

- K0010 Knowledge of communication methods, principles, and concepts that support the network infrastructure.
- K0011 Knowledge of capabilities and applications of network equipment including routers, switches, bridges, servers, transmission media, and related hardware.
- K0029 Knowledge of organization's Local and Wide Area Network connections.
- K0050 Knowledge of local area and wide area networking principles and concepts including bandwidth management.
- K0053 Knowledge of measures or indicators of system performance and availability.
- 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]).
- K0071 Knowledge of remote access technology concepts.
- K0088 Knowledge of systems administration concepts.

- K0104 Knowledge of Virtual Private Network (VPN) security.
- 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).
- K0113 Knowledge of different types of network communication (e.g., LAN, WAN, MAN, WLAN, WWAN).
- K0130 Knowledge of virtualization technologies and virtual machine development and maintenance.
- K0137 Knowledge of the range of existing networks (e.g., PBX, LANs, WANs, WIFI, SCADA).
- K0138 Knowledge of Wi-Fi.
- K0160 Knowledge of the common attack vectors on the network layer.
- K0180 Knowledge of network systems management principles, models, methods (e.g., end-to-end systems performance monitoring), and tools.
- K0318 Knowledge of operating system command-line tools.
- K0332 Knowledge of network protocols such as TCP/IP, Dynamic Host Configuration, Domain Name System (DNS), and directory services.
- K0333 Knowledge of network design processes, to include understanding of security objectives, operational objectives, and trade-offs.
- S0004 Skill in analyzing network traffic capacity and performance characteristics.
- S0033 Skill in diagnosing connectivity problems.
- S0035 Skill in establishing a routing schema.
- S0041 Skill in installing, configuring, and troubleshooting LAN and WAN components such as routers, hubs, and switches.
- S0073 Skill in using virtual machines. (e.g., Microsoft Hyper-V, VMWare vSphere, Citrix XenDesktop/Server, Amazon Elastic Compute Cloud, etc.).
- S0084 Skill in configuring and utilizing network protection components (e.g., Firewalls, VPNs, network intrusion detection systems).

# Alignment of Learning Outcomes, Assessment and Graduate Attributes

— N/A Level  
 ● Introductory Level  
 ● Intermediate Level  
 ● Graduate Level  
 ○ Professional Level  
 ○ Advanced Level

## Alignment of Assessment Tasks to Learning Outcomes

Assessment Tasks	Learning Outcomes			
	1	2	3	4
1 - Written Assessment - 30%	●	●		
2 - Portfolio - 20%	●		●	●
3 - Written Assessment - 50%		●	●	●

## 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 - First Nations Knowledges				
9 - Aboriginal and Torres Strait Islander Cultures				

## Textbooks and Resources

### Textbooks

There are no required textbooks.

### IT Resources

You will need access to the following IT resources:

- CQUniversity Student Email
- Internet
- Unit Website (Moodle)
- Cisco Packet Tracer
- draw.io

## Referencing Style

All submissions for this unit must use the referencing style: Harvard (author-date)

For further information, see the Assessment Tasks.

## Teaching Contacts

Zhenglin Wang Unit Coordinator  
z.wang@cqu.edu.au

## Schedule

### Week 1 - 14 Jul 2025

Module/Topic	Chapter	Events and Submissions/Topic
Introduction to Enterprise and Cloud Networking		

### Week 2 - 21 Jul 2025

Module/Topic	Chapter	Events and Submissions/Topic
Analysing Business Goals and Constraints		

### Week 3 - 28 Jul 2025

Module/Topic	Chapter	Events and Submissions/Topic
Characterising Existing Networks and Traffic		Students must complete their group formation for Assignments 1 and 3 by the end of this week.

### Week 4 - 04 Aug 2025

Module/Topic	Chapter	Events and Submissions/Topic
Resource Planning for Network Design		

### Week 5 - 11 Aug 2025

Module/Topic	Chapter	Events and Submissions/Topic
Network Topology Design		

### Vacation Week - 18 Aug 2025

Module/Topic	Chapter	Events and Submissions/Topic

### Week 6 - 25 Aug 2025

Module/Topic	Chapter	Events and Submissions/Topic

Selecting Network Technologies		Assignment 1: Due Week 6 Monday, 11:45 PM AEST
Week 7 - 01 Sep 2025		Report and Presentation of Initial Network Design Due: Week 6 Monday (25 Aug 2025) 11:45 pm AEST
Module/Topic	Chapter	Events and Submissions/Topic
Networking in the Cloud		
Week 8 - 08 Sep 2025		
Module/Topic	Chapter	Events and Submissions/Topic
Remote Access		
Week 9 - 15 Sep 2025		
Module/Topic	Chapter	Events and Submissions/Topic
Reliability in the Cloud		
Week 10 - 22 Sep 2025		
Module/Topic	Chapter	Events and Submissions/Topic
Wireless Networks		
Week 11 - 29 Sep 2025		
Module/Topic	Chapter	Events and Submissions/Topic
Network Management and Automation		Assessment 2: Due Week 11 Monday, 11:45 PM AEST
		Portfolio Due: Week 11 Monday (29 Sept 2025) 11:45 pm AEST
Week 12 - 06 Oct 2025		
Module/Topic	Chapter	Events and Submissions/Topic
Review and Discussion		
Review/Exam Week - 13 Oct 2025		
Module/Topic	Chapter	Events and Submissions/Topic
		Assignment 3: Due Week 13 Monday, 11:45 PM
		The Final Report of Comprehensive Network Design Due: Review/Exam Week Monday (13 Oct 2025) 11:45 pm AEST
Exam Week - 20 Oct 2025		
Module/Topic	Chapter	Events and Submissions/Topic

## Term Specific Information

You should use your lecture and tutorial classes as your first point of contact with the teaching staff. We encourage you to ask questions of your lecturer or tutor during class each week. This unit requires the use of Microsoft Learn On Demand, and you will need to create an account if you do not already have one. Instructions for account setup will be provided in the Week 1 tutorial. If you have any questions, please contact the Unit Coordinator, Dr. Zhenglin Wang, at [z.wang@cqu.edu.au](mailto:z.wang@cqu.edu.au).

## Assessment Tasks

### 1 Report and Presentation of Initial Network Design

Assessment Type  
Written Assessment

#### Task Description

In this assessment task, leveraging insights from weekly group discussions, you will analyse the provided scenario to initially plan and design an enterprise network, applying the knowledge and skills acquired in this unit. The process involves active participation in weekly discussions, brainstorming, and conducting weekly lab exercises, ultimately consolidating these efforts into an initial report accompanied by a presentation. This assessment comprises two parts: a presentation (Part A) and a written report (Part B), to be completed collaboratively in groups of 3 or 4 students. While this assessment task is a group assignment, you are required to submit your work individually; failure to do so will result in a zero mark.

Additional details regarding this assessment task are available in the Assessment Item 1 specifications on the Moodle unit website.

#### AI ASSESSMENT SCALE - AI PLANNING

You may use AI for planning, idea development, and research. Your final submission should show how you have developed and refined these ideas.

#### Assessment Due Date

Week 6 Monday (25 Aug 2025) 11:45 pm AEST

Late submissions are subject to the university's late submission penalty policies.

#### Return Date to Students

Week 8 Monday (8 Sept 2025)

Assessments will be returned through Moodle website. Late submissions with or without extension approvals may be returned after the above date.

#### Weighting

30%

#### Assessment Criteria

Your report and presentation will be evaluated based on quality, correctness, and clarity using specified marking criteria. The two parts of this assessment task carry the following weightings:

- Presentation (Part A) - 10%
- Written Report (Part B) - 20%

Additional details regarding the assessment criteria are available in the Assessment Item 1 specifications on the Moodle unit website.

#### Referencing Style

- [Harvard \(author-date\)](#)

#### Submission

Online

#### Submission Instructions

Each student is required to submit their report individually. Failure to submit will result in a mark of zero.

#### Learning Outcomes Assessed

- Analyse business and technical requirements to create plans and designs for enterprise networks
- Justify the selection of network technologies when there are conflicting requirements, such as cost, performance, security and business goals

## 2 Portfolio

#### Assessment Type

Portfolio

#### Task Description

The Portfolio requires students to maintain a diary/journal for tutorial questions and/or lab exercises (e.g., screenshots, testing results, reflections, etc.) in a computer lab on a weekly basis from Week 1 to Week 10. This assignment is individual, and students collaborating in a group are required to submit their distinct work.

#### AI ASSESSMENT SCALE - NO AI

You must not use AI at any point during the assessment. You must demonstrate your core skills and knowledge.

#### Assessment Due Date

Week 11 Monday (29 Sept 2025) 11:45 pm AEST

Late submissions are subject to the university's late submission penalty policies.

Return Date to Students  
Review/Exam Week Monday (13 Oct 2025)

Late submissions with or without extension approvals may be returned after the above dates.

Weighting  
20%

#### Assessment Criteria

The Portfolio will be evaluated according to the clarity, relevance, and quality of the consistent contributions documented in a diary/journal for tutorial questions and/or lab exercises each week. Lab exercises recorded in the Portfolio will account for 20% of the total assessment. Further details regarding the assessment criteria are available on the unit Moodle website.

#### Referencing Style

- [Harvard \(author-date\)](#)

#### Submission

Online

#### Submission Instructions

The assignment must be submitted online in Moodle.

#### Learning Outcomes Assessed

- Analyse business and technical requirements to create plans and designs for enterprise networks
- Design networks comprising a range of technologies, including on-premise, wireless and cloud
- Apply industry-grade tools and techniques when designing, deploying and managing networks, including automation, remote access and high availability.

## 3 The Final Report of Comprehensive Network Design

#### Assessment Type

Written Assessment

#### Task Description

In this assessment task, building upon your initial network design from Assessment 1, you will perform an extended network design that incorporates optimization, justification, and security strategies to enhance the network robustness. Working collaboratively with your team (3 to 4 members), you must deliver a comprehensive report, detailing both teamwork and individual contributions to the network design within the specified scenario. While this assessment task is a group assignment, you are required to submit your work individually; failure to do so will result in a zero mark. Additional information regarding this assessment task are available in the Assessment 3 specifications on the Moodle unit website.

#### AI ASSESSMENT SCALE - AI PLANNING

You may use AI for planning, idea development, and research. Your final submission should show how you have developed and refined these ideas.

#### Assessment Due Date

Review/Exam Week Monday (13 Oct 2025) 11:45 pm AEST

Late submissions are subject to the university's late submission penalty policies.

#### Return Date to Students

Assessments will be returned on the Certification date.

Weighting  
50%

#### Assessment Criteria

You will be evaluated based on your group report, which involves designing a network that includes both on-premise and cloud-based solutions for the given scenario. This should demonstrate the knowledge and skills gained from this and previous units. The two components, teamwork and individual contributions, will be assessed separately, as outlined in the provided marking criteria.

For further details on the assessment requirements, please refer to the Assessment 3 specifications available on the Moodle unit website.

#### Referencing Style

- [Harvard \(author-date\)](#)

#### Submission

Online

### Submission Instructions

The assignment must be submitted online in Moodle.

### Learning Outcomes Assessed

- Justify the selection of network technologies when there are conflicting requirements, such as cost, performance, security and business goals
- Design networks comprising a range of technologies, including on-premise, wireless and cloud
- Apply industry-grade tools and techniques when designing, deploying and managing networks, including automation, remote access and high availability.

## Academic Integrity Statement

As a CQUniversity student you are expected to act honestly in all aspects of your academic work.

Any assessable work undertaken or submitted for review or assessment must be your own work. Assessable work is any type of work you do to meet the assessment requirements in the unit, including draft work submitted for review and feedback and final work to be assessed.

When you use the ideas, words or data of others in your assessment, you must thoroughly and clearly acknowledge the source of this information by using the correct referencing style for your unit. Using others' work without proper acknowledgement may be considered a form of intellectual dishonesty.

Participating honestly, respectfully, responsibly, and fairly in your university study ensures the CQUniversity qualification you earn will be valued as a true indication of your individual academic achievement and will continue to receive the respect and recognition it deserves.

As a student, you are responsible for reading and following CQUniversity's policies, including the [Student Academic Integrity Policy and Procedure](#). This policy sets out CQUniversity's expectations of you to act with integrity, examples of academic integrity breaches to avoid, the processes used to address alleged breaches of academic integrity, and potential penalties.

### What is a breach of academic integrity?

A breach of academic integrity includes but is not limited to plagiarism, self-plagiarism, collusion, cheating, contract cheating, and academic misconduct. The Student Academic Integrity Policy and Procedure defines what these terms mean and gives examples.

### Why is academic integrity important?

A breach of academic integrity may result in one or more penalties, including suspension or even expulsion from the University. It can also have negative implications for student visas and future enrolment at CQUniversity or elsewhere. Students who engage in contract cheating also risk being blackmailed by contract cheating services.

### Where can I get assistance?

For academic advice and guidance, the [Academic Learning Centre \(ALC\)](#) can support you in becoming confident in completing assessments with integrity and of high standard.

### What can you do to act with integrity?



**Be Honest**

If your assessment task is done by someone else, it would be dishonest of you to claim it as your own



**Seek Help**

If you are not sure about how to cite or reference in essays, reports etc, then seek help from your lecturer, the library or the Academic Learning Centre (ALC)



**Produce Original Work**

Originality comes from your ability to read widely, think critically, and apply your gained knowledge to address a question or problem