



# COIT20264 Network Design

## Term 1 - 2023

Profile information current as at 24/04/2024 12:13 am

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 provides you with the skills and knowledge required to design wired and wireless networks using the Top-Down Network Design methodology. The unit equips you with the approaches used to gather business and technical requirements, and analyse them together with the security policies of the organisation. The unit includes campus, branch, WAN, wireless and Internet edge designs as well as 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 Co-requisite: COIT20262 Advanced Network Security

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 1 - 2023

- 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: 40%

#### 2. **Written Assessment**

Weighting: 60%

### 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 Teaching team

**Feedback**

Students do not get formal feedback early in the term.

**Recommendation**

Review assessments and their due date to introduce formal feedback earlier in the term.

#### Feedback from Students' feedback

**Feedback**

Some parts of the workshop contents are out of date and should be updated with the latest networking applications.

**Recommendation**

Review the workshop materials and update.

## Unit Learning Outcomes

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

1. Prepare the business and technical requirements of the organisation in relation to network design
2. Analyse the business and technical requirements
3. Compare and contrast the possible alternative logical and physical network designs
4. Design a network by applying the top-down network design methodology
5. Justify that the designed network satisfies the requirements.

Australian Computer Society (ACS) recognises the Skills Framework for the Information Age (SFIA). SFIA is in use in over 100 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 at

<https://www.acs.org.au/professionalrecognition/mysfia-b2c.html>

This unit contributes to the following workplace skills as defined by SFIA. The SFIA code is included:

- Network Planning (NTPL)
- Project management (PRMG)
- Network Design (NTDS)
- Availability Management (AVMT)
- Capacity Management (CPMG)

## Alignment of Learning Outcomes, Assessment and Graduate Attributes



### Alignment of Assessment Tasks to Learning Outcomes

Assessment Tasks	Learning Outcomes				
	1	2	3	4	5
<b>1 - Written Assessment - 40%</b>	•	•	•	•	•



## Textbooks and Resources

### Textbooks

COIT20264

#### Prescribed

##### Top-Down Network Design

Edition: 3rd (2011)

Authors: Priscilla Oppenheimer

Cisco Press

Indianapolis , IN , USA

ISBN: 978-1-58720-283-4

Binding: Hardcover

#### Additional Textbook Information

Textbooks can be accessed online at the CQUniversity Library website. If you prefer your own copy, you can purchase either paper or eBook versions at the CQUni Bookshop here: <http://bookshop.cqu.edu.au> (search on the Unit code)

[View textbooks at the CQUniversity Bookshop](#)

### 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

**Sunil Seneviratne** Unit Coordinator  
[s.seneviratne@cqu.edu.au](mailto:s.seneviratne@cqu.edu.au)

## Schedule

### Week 1 - 06 Mar 2023

Module/Topic	Chapter	Events and Submissions/Topic
Introduction to Network Design with Analysing Business Goals and Constraints	Chapter 1	

### Week 2 - 13 Mar 2023

Module/Topic	Chapter	Events and Submissions/Topic
Network Design Tradeoffs	Chapter 2	

### Week 3 - 20 Mar 2023

Module/Topic	Chapter	Events and Submissions/Topic
Analysing and Characterising Existing Networks and Traffic	Chapters 3 and 4	

**Week 4 - 27 Mar 2023**

Module/Topic	Chapter	Events and Submissions/Topic
Network Topology Design	Chapter 5	

**Week 5 - 03 Apr 2023**

Module/Topic	Chapter	Events and Submissions/Topic
Network Addressing and Routing Design with Security Management	Chapters 6 and 7	

**Vacation Week - 10 Apr 2023**

Module/Topic	Chapter	Events and Submissions/Topic

**Week 6 - 17 Apr 2023**

Module/Topic	Chapter	Events and Submissions/Topic
Analysing Technologies and Devices for Network Design	Chapter 10	

**Week 7 - 24 Apr 2023**

Module/Topic	Chapter	Events and Submissions/Topic
Selecting Technologies and Devices for Designed Enterprise Networks	Chapter 11	<b>Assessment Item 1: Report and Presentation of Logical Network Design</b> Due: Week 7 Monday (24 Apr 2023) 11:45 pm AEST

**Week 8 - 01 May 2023**

Module/Topic	Chapter	Events and Submissions/Topic
Analysing and implementing Wireless Network Designs	Online materials will be provided.	

**Week 9 - 08 May 2023**

Module/Topic	Chapter	Events and Submissions/Topic
Hardening the Designed Network	Chapter 8	

**Week 10 - 15 May 2023**

Module/Topic	Chapter	Events and Submissions/Topic
Optimising the Designed Network	Chapter 13	

**Week 11 - 22 May 2023**

Module/Topic	Chapter	Events and Submissions/Topic
Justifying and Documenting the Designed Network	Chapters 12 and 14	

**Week 12 - 29 May 2023**

Module/Topic	Chapter	Events and Submissions/Topic
Review and Discussion		<b>Assessment Item 2: The Final Report of Logical and Physical Network Design</b> Due: Week 12 Friday (2 June 2023) 11:45 pm AEST

## Term Specific Information

For any queries, please contact the unit coordinator from Melbourne campus: Sunil Seneviratne (e-mail: [s.seneviratne@cqu.edu.au](mailto:s.seneviratne@cqu.edu.au))

## Assessment Tasks

# 1 Assessment Item 1: Report and Presentation of Logical Network Design

## Assessment Type

Written Assessment

## Task Description

In this assessment task, based on weekly group discussions, you will study the given scenario to design a logical network using top-down network design methodology. You will go through discussions, brainstorming, and contributing to weekly group discussion questions in achieving this assessment task into a report with a presentation. This assessment task has two parts; a presentation (Part A) and a written report (Part B) and should be undertaken in a group of 3 or 4 students.

Further details of this assessment task will be provided in the Assessment Item 1 specification on the Moodle unit website.

## Assessment Due Date

Week 7 Monday (24 Apr 2023) 11:45 pm AEST

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

## Return Date to Students

Week 9 Monday (8 May 2023)

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

## Weighting

40%

## Assessment Criteria

Your report and presentation will be marked based on quality, correctness, and clarity with a given marking criteria tabular. The two parts of this assessment task carry the following weightings:

- Presentation (Part A) - 12%
- Written Report (Part B) - 28%

In this assessment task, you are assessed on your ability to analyse the given scenario and, using the top-down network design methodology, design and document your logical network. You are also assessed on your ability to present your logical network design.

Further details of the assessment criteria will be available in the Assessment Item 1 specification on the Moodle unit website.

## Referencing Style

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

## Submission

Online

## Submission Instructions

Each of you are required to submit your report individually. More details will be provided in the assignment specifications.

## Learning Outcomes Assessed

- Prepare the business and technical requirements of the organisation in relation to network design
- Analyse the business and technical requirements
- Compare and contrast the possible alternative logical and physical network designs
- Design a network by applying the top-down network design methodology
- Justify that the designed network satisfies the requirements.

## Graduate Attributes

- Knowledge
- Communication
- Cognitive, technical and creative skills
- Research
- Self-management
- Ethical and Professional Responsibility
- Leadership

## 2 Assessment Item 2: The Final Report of Logical and Physical Network Design

### Assessment Type

Written Assessment

### Task Description

In this assessment task, based on your initial logical network design achieved in Assessment 1, you will undertake a further physical network design with optimisation and justification, as well as security strategies to harden the network design. With your team (3 to 4 members), you are required to complete a full report, including the teamwork and individual contribution to the network design for the given scenario.

Further details of this assessment task will be provided in the Assessment 2 specifications on the Moodle unit website.

### Assessment Due Date

Week 12 Friday (2 June 2023) 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 (It is required for the unit without an exam).

### Weighting

60%

### Assessment Criteria

You are assessed on your abilities to undertake the design of a network including logical and physical network designs for the given scenario using the top-down network design methodology. The two parts, teamwork and the individual contribution, will be marked separately, which is specified in a provided marking tabular.

Further details of the assessment criteria will be available in the Assessment 2 specifications on the Moodle unit website.

### Referencing Style

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

### Submission

Online

### Submission Instructions

Each of you are required to submit your report individually. More details will be provided in the assignment specifications.

### Learning Outcomes Assessed

- Compare and contrast the possible alternative logical and physical network designs
- Design a network by applying the top-down network design methodology
- Justify that the designed network satisfies the requirements.

### Graduate Attributes

- Knowledge
- Communication
- Cognitive, technical and creative skills
- Research
- Self-management
- Ethical and Professional Responsibility



## 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