



COIT11238 *Networked Infrastructure* Foundations Term 1 - 2022

Profile information current as at 26/05/2022 08:41 pm

All details in this unit profile for COIT11238 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 will provide you with the foundation knowledge of computer and network infrastructure that underpins Information and Communication Technologies (ICT) in modern organisations. You will study the physical and logical components and concepts of ICT related to computer networking. Specifically, you will explore computer architecture components, operating systems, and network evolution, hardware, protocols and security. By the end of this unit, you will be able to install and configure basic networks. You will be able to troubleshoot basic network problems using network management software.

Details

Career Level: *Undergraduate*

Unit Level: *Level 1*

Credit Points: 6

Student Contribution Band: 8

Fraction of Full-Time Student Load: 0.125

Pre-requisites or Co-requisites

Anti-requisite: If students have undertaken COIT11233 Information and Communication Technology Foundations, then this unit should not be taken.

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 - 2022

- Brisbane
- Cairns
- Melbourne
- Online
- Rockhampton
- Sydney
- Townsville

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 Undergraduate 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. **Portfolio**

Weighting: 40%

2. **Online Quiz(zes)**

Weighting: 30%

3. **Written Assessment**

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 feedback

Feedback

Some students have difficulties following the provided instructions to download the needed networking simulation tool, Cisco Packet Tracer.

Recommendation

The existing instructions for downloading Cisco Packet Tracer will be reviewed for updating with more details.

Feedback from Student feedback

Feedback

The provided extra resources are informative and helpful for learning this unit.

Recommendation

Extra resources for each week topic will be kept and updated.

Feedback from Staff feedback

Feedback

The learning and teaching materials are well organised.

Recommendation

The style of organising the provided teaching and learning materials will be kept.

Unit Learning Outcomes

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

1. Explain the role of hardware and software components in computer networks
2. Recognise the importance of protocols, standards and layered architectures in building computer networks
3. Explain the selection of network components, topologies and technologies to meet business requirements
4. Describe challenges and solutions in securing computer networks and infrastructure
5. Interpret the use of forwarding and encapsulation to deliver data in computer networks
6. Discuss techniques for managing, documenting and troubleshooting computer networks.

The Australian Computer Society (ACS) 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 7](#) (the SFIA code is included):

- Network Support (NTAS)
- IT Infrastructure (ITOP)
- Security Administration (SCAD)
- Systems Installation/Decommissioning (HSIN)
- Problem Management (PBMG)

Alignment of Learning Outcomes, Assessment and Graduate Attributes



Alignment of Assessment Tasks to Learning Outcomes

Assessment Tasks	Learning Outcomes					
	1	2	3	4	5	6
1 - Online Quiz(zes) - 30%	•	•	•	•	•	
2 - Written Assessment - 30%		•	•			•
3 - Portfolio - 40%	•			•	•	•

Alignment of Graduate Attributes to Learning Outcomes

Graduate Attributes	Learning Outcomes					
	1	2	3	4	5	6
1 - Communication		•	•	•	•	•
2 - Problem Solving		•	•	•	•	•
3 - Critical Thinking			•	•	•	
4 - Information Literacy		•		•		•
5 - Team Work						
6 - Information Technology Competence	•	•	•	•	•	•
7 - Cross Cultural Competence						
8 - Ethical practice						
9 - Social Innovation						
10 - Aboriginal and Torres Strait Islander Cultures						

Alignment of Assessment Tasks to Graduate Attributes

Assessment Tasks	Graduate Attributes									
	1	2	3	4	5	6	7	8	9	10
1 - Online Quiz(zes) - 30%		•	•	•		•				
2 - Written Assessment - 30%	•	•	•	•		•				
3 - Portfolio - 40%	•	•	•	•		•				

Textbooks and Resources

Textbooks

COIT11238

Prescribed

Guide to Networking Essentials 8th (2019)

Edition: 8th (2019)

Authors: Greg Tomsho

Cengage

Boston , MA , USA

ISBN: 978-0-3571-1828-3

Binding: Paperback

[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
- Wireshark network protocol analyser
- 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

Yufeng Lin Unit Coordinator

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Schedule

Week 1 - 07 Mar 2022

Module/Topic	Chapter	Events and Submissions/Topic
Introduction to Network Infrastructure	Chapter 1 & 11	

Week 2 - 14 Mar 2022

Module/Topic	Chapter	Events and Submissions/Topic
Fundamentals of Network Communication	Chapter 1 & 7	

Week 3 - 21 Mar 2022

Module/Topic	Chapter	Events and Submissions/Topic
Network Hardware Essentials	Chapter 2	

Week 4 - 28 Mar 2022

Module/Topic	Chapter	Events and Submissions/Topic
Network Topologies and Technologies	Chapter 3	Portfolio: the first draft (10%) is due this Friday.

Week 5 - 04 Apr 2022

Module/Topic	Chapter	Events and Submissions/Topic
Network Media	Chapter 4	

Mid-Term Break - 11 Apr 2022

Module/Topic	Chapter	Events and Submissions/Topic
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Week 6 - 18 Apr 2022

Module/Topic	Chapter	Events and Submissions/Topic
Network Protocols	Chapter 5	Quiz 1 (15%) is due this Monday

Week 7 - 25 Apr 2022

Module/Topic	Chapter	Events and Submissions/Topic
IP Addressing	Chapter 6	

Week 8 - 02 May 2022

Module/Topic	Chapter	Events and Submissions/Topic
Network Hardware in Depth	Chapter 8	Portfolio: The second draft (10%) is due this Friday.

Week 9 - 09 May 2022

Module/Topic	Chapter	Events and Submissions/Topic
Introduction to Network Security	Chapter 9	

Week 10 - 16 May 2022

Module/Topic	Chapter	Events and Submissions/Topic
Wide Area Networking and Cloud Computing	Chapter 10	Quiz 2 (15%) is due this Friday.

Week 11 - 23 May 2022

Module/Topic	Chapter	Events and Submissions/Topic
Network Management and Troubleshooting	Chapter 12 and 14	

Week 12 - 30 May 2022

Module/Topic	Chapter	Events and Submissions/Topic
The Internet of Things (IoT)	Chapter 13	ASSESSMENT ITEM 3 -- WRITTEN ASSESSMENT Due: Week 12 Friday (3 June 2022) 11:45 pm AEST

Review/Exam Week - 06 Jun 2022

Module/Topic	Chapter	Events and Submissions/Topic
		Portfolio: the final version (20%) is due this Friday.

Exam Week - 13 Jun 2022

Module/Topic	Chapter	Events and Submissions/Topic
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Term Specific Information

Required Lab Equipment:

In this unit, you will conduct lab exercises with real networking equipment in Weeks 3, 6, 9 and 12. On-campus students will use the provided equipment in the ICT computer lab. On-campus students do not need to prepare any special equipment. Online students will need the following recommended equipment:

- 2 x PCs with Ethernet
- 1 x Wi-Fi device
- 1 x Wireless Router
- 2 x Ethernet cables

This equipment is defined in further detail below. The table shows the usage of the equipment in each lab exercise. If you do not have the recommended equipment, you are advised to purchase it. If purchasing the equipment is not possible, there are other options. For advice on whether your existing equipment is suitable, which equipment to purchase, or what other options are available, see the Moodle site or contact the Unit Coordinator.

Lab in Weeks	Computers	Network Devices	Cables/Accessories
Week 3 Lab	2 x PCs with Ethernet	--	1 x Ethernet cable
Week 6 Lab	2 x PCs with Ethernet	1 x Wireless router (or 1 x Ethernet switch)	2 x Ethernet cables
Week 9 Lab	1 x PC with Ethernet + 1 x Wi-Fi device	1 x Wireless router (or 1 x Wi-Fi AP)	1 x Ethernet cable
Week 12 Lab	1 x PC with Ethernet + 1 x Wi-Fi device	1 x Wireless router (or 1 x Wi-Fi AP + 1 x router)	2 x Ethernet cables

PC with Ethernet: A desktop computer or laptop computer with a wired Ethernet port (also called LAN port or NIC). Alternatively, a low-cost computer such as a Raspberry Pi could be used if it has a wired Ethernet port. If your laptop computer does not have a wired Ethernet port, you can purchase a USB-to-Ethernet adapter.

Wi-Fi device: a laptop or mobile phone (or any other computing device with Wi-Fi, such as a Raspberry Pi 3 or 4).

Ethernet cable: a LAN cable with RJ45 connectors on both ends.

Wireless Router: typically used for home Internet. It supports Wi-Fi, has an in-built Ethernet switch (e.g., 4 ports) and acts as a router. You may have a Wireless Router provided to you by your Internet Service Provider. However, it is preferable if you have access to a standalone Wireless Router (not that used for home Internet) so that you can conduct lab exercises without interrupting your home Internet.

If you have a suitable Wireless Router, you do **NOT** need the following equipment:

- Ethernet switch: A 4-port Ethernet (LAN) switch.
- Wi-Fi Access Point (AP): A dedicated wireless access point, normally with just a single Ethernet port.
- Router: a standalone wired router with at least 2 Ethernet ports.

If you are unclear about the equipment requirements, see the Moodle site or contact the Unit coordinator.

Assessment Tasks

1 ASSESSMENT ITEM 1 -- Portfolio

Assessment Type

Portfolio

Task Description

The Portfolio requires students to maintain a diary/journal for tutorial questions and/or lab exercises in a computer lab each week (e.g., screenshots, testing results, reflections, etc.), including some specific tutorial questions to be answered.

The Portfolio has two drafts as interim submissions, and the final submission for all tutorial activities: the first draft (10%) due on Week 4 Friday, the second draft (10%) due on Week 8 Friday; the final submission (20%) is due on Friday of Review Week (Week 13).

Assessment Due Date

The first draft due on Week 4 Friday; the second draft due on Week 8 Friday; and the final submission due on Friday of

Review Week (13).

Return Date to Students

Each assessment will be returned through Moodle in two weeks after its due date.

Weighting

40%

Assessment Criteria

The Portfolio will be assessed based on the clarity, relevance, and quality of the regular contributions recorded in a diary/journal for tutorial questions and/or lab exercises each week. Lab exercises recorded in Portfolio will be marked as part of this assessment, 20% in total (5% in the first draft, 5% in the second draft and 10% in the final submission). More details of the assessment criteria will be provided on the unit Moodle website.

Referencing Style

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

Submission

Online

Submission Instructions

The Portfolio is an individual assessment item.

Learning Outcomes Assessed

- Explain the role of hardware and software components in computer networks
- Describe challenges and solutions in securing computer networks and infrastructure
- Interpret the use of forwarding and encapsulation to deliver data in computer networks
- Discuss techniques for managing, documenting and troubleshooting computer networks.

Graduate Attributes

- Communication
- Problem Solving
- Critical Thinking
- Information Literacy
- Information Technology Competence

2 ASSESSMENT ITEM 2 -- Online Quiz

Assessment Type

Online Quiz(zes)

Task Description

This assessment item includes two online quizzes: Quiz 1 and Quiz 2. The quizzes consist of a series of questions (e.g., multiple-choice, short answers). Questions will be drawn from topics in Weeks 1-5 (Quiz 1) and Weeks 6-9 (Quiz 2). Complete these Moodle online quizzes by the due date. The quizzes automatically close if you have not submitted your attempt at a quiz by the due date/time. The quizzes will be finalised (automatically submitted) at the due date/time. Before the due date, you need to submit each attempt on the quiz to check the result.

You are allowed to attempt the quizzes as many times as you want before the due date, however, your last submission for each quiz will be assessed as the final result.

Please ensure that you record details of your submission (e.g., the received result, as well as the date and time of your submission by taking a screenshot) in case there are some problems with your submission to the Moodle system.

Please note that the questions are selected randomly from a pool, so you are unlikely to be asked the same questions each time you attempt the quizzes. You will not be able to see your detailed feedback of the results until the quiz has closed. To attempt and submit the quiz your computer must be connected to the Internet, although it is possible to save and resume the quiz at a later point in time.

Extensions are not possible for quizzes because the answers will be released after the due date. If you miss attempting the quizzes, you cannot do it later.

Number of Quizzes

2

Frequency of Quizzes

Other

Assessment Due Date

Quiz 1 (15%) due on Week 6 Monday; Quiz 2 (15%) due on Week 10 Friday. Warning: the quizzes close after the due

dates, and no further attempts are allowed.

Return Date to Students

Immediately after the quizzes close.

Weighting

30%

Assessment Criteria

The quizzes consist of a set of questions. These questions count towards 30% of the total grade in this unit: 15% for each of Quiz 1 and Quiz 2. Each submitted attempt will be marked.

The quizzes are automatically graded by the system based on the selection of correct or incorrect answers. Detailed results of your submission will be generated after the quiz closes.

Remember- you can attempt each quiz as many times as you want before the due date, however, your last successful submission for each quiz will be your final mark of that quiz.

Referencing Style

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

Submission

Online

Submission Instructions

Quizzes are to be attempted and submitted as individual assessment items.

Learning Outcomes Assessed

- Explain the role of hardware and software components in computer networks
- Recognise the importance of protocols, standards and layered architectures in building computer networks
- Explain the selection of network components, topologies and technologies to meet business requirements
- Describe challenges and solutions in securing computer networks and infrastructure
- Interpret the use of forwarding and encapsulation to deliver data in computer networks

Graduate Attributes

- Problem Solving
- Critical Thinking
- Information Literacy
- Information Technology Competence

3 ASSESSMENT ITEM 3 -- WRITTEN ASSESSMENT

Assessment Type

Written Assessment

Task Description

The purpose of this assignment is to respond in your own words to a series of short-answer questions based on several case study scenarios relating to the topics covered in this unit.

Note that late penalties apply (5% of the total available marks per calendar day late or part thereof). Assignments received 14 days or more after the due date will not be marked and will receive zero.

You may apply for extensions but must provide documentary evidence to support your request. See the unit website for more details.

Assessment Due Date

Week 12 Friday (3 June 2022) 11:45 pm AEST

Your written assignment should be submitted in doc/docx format. See the unit website for more details.

Return Date to Students

Exam Week Friday (17 June 2022)

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

Weighting

30%

Assessment Criteria

A marking criterion will be provided as part of your submission template. Please ensure you read it before attempting the assignment. You will be assessed on your responses regarding technical details, accuracy, and clarity for the given contexts.

Referencing Style

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

Submission

Online

Submission Instructions

This assignment must be attempted and submitted individually.

Learning Outcomes Assessed

- Recognise the importance of protocols, standards and layered architectures in building computer networks
- Explain the selection of network components, topologies and technologies to meet business requirements
- Discuss techniques for managing, documenting and troubleshooting computer networks.

Graduate Attributes

- Communication
- Problem Solving
- Critical Thinking
- Information Literacy
- Information Technology Competence

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