



COMP6170

Networking and Cloud Computing

Session 2, In person-scheduled-weekday, North Ryde 2026

School of Computing

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General Information

Unit convenor and teaching staff

Unit Convenor and Lecturer

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4RPD, Level 3

Wednesday, 11 AM -12 PM (on Zoom)

Unit Convenor

Charanya Ramakrishnan

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Credit points

10

Prerequisites

Corequisites

Co-badged status

Co-badged with COMP6170

Unit description

This unit introduces students with non-technical backgrounds to the principles and concepts of computer networking and cloud computing. The aim is to provide students with an understanding of the differing ways that networks are structured between corporate environments, the Internet, and The Cloud.

Topics include an introduction to computer organisation, network stacks and protocols, network addressing, inter-networking communications, utility computing, multi-tenanting, and an Introduction to security and network management.

Learning in this unit enhances student understanding of global challenges identified by the United Nations Sustainable Development Goals ([UNSDGs](#)) Industry, Innovation and Infrastructure

Important Academic Dates

Information about important academic dates including deadlines for withdrawing from units are available at <https://www.mq.edu.au/study/calendar-of-dates>

Learning Outcomes

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

- ULO1:** Discuss the organisation of physical compute and storage resources.
- ULO2:** Describe the arrangement and operation of physical networks, and the role of network protocol stacks.
- ULO3:** Demonstrate an understanding of IP addressing, routing and subnetting.
- ULO4:** Describe and use an arrangement and operation of cloud compute and storage resources.
- ULO5:** Describe and use an arrangement and operation of virtual networks.
- ULO6:** Compare and contrast various network management principles and orchestration approaches of cloud compute, communication, and storage resources.
- ULO7:** Demonstrate technical networking proficiency including ability to configure, construct, and document, and in simple cases, design networks, as well as the ability to perform traffic analysis on local area networks.

General Assessment Information

Assessment info:

Lab Book

For each practical, you will undertake a mixture of in-class and/or pre-lab activities. **Weekly record of Lab book is strongly recommended.** This lab book must be submitted after the week 12 practical.

RELEASE: The weekly practical worksheets will be made available no later than the Sunday prior to each teaching week. The first practical worksheet will be released no later than 02 August (Sunday of Week 1).

Project

The project will test your understanding of selected networking and cloud technologies and their usage within an organisation (or across organisations), including issues relating to security.

Students might be required to perform some independent research as part of the project.

RELEASE: The initial project specifications will be released no later than 09 August (Sunday of Week 2).

Final Exam

Students will sit a final exam to assess their understanding of the unit material in an invigilated environment. The final exam is an iLearn-based quiz that assesses concepts covered in lectures, SGTAs, and practicals. **There is only 1 attempt at the exam.**

RELEASE: Information and sample questions are to be released no later than 06 November

(Friday of Week 13).

If you miss the final exam due to illness/misadventure, then a supplementary exam will only be arranged upon an approved special consideration application. Otherwise, a mark of 0 will be applied for the exam. For details of the exam schedule, refer to the eStudent site and to the COMP6170 unit information section in iLearn for updates and the scope of the examination. Details of the special considerations policy can be found [here](#).

Requirements to pass this unit

To pass the unit, you must achieve a final grade of 50 out of 100 or above. Each assessment contributes to a certain percentage of the final grade. These weightings are listed in the assessment tasks table in this unit guide.

Short Extensions For some assessment types, students may request (before the due date) an additional 3 calendar days to complete eligible assessments. No reason or evidence is required. This only applies to individual assessments when the Short Extension flag is marked as 'Yes'. Please submit a Short Extension request through <https://connect.mq.edu.au>. For more information on Short Extensions, refer to <https://students.mq.edu.au/study/assessment-exams/assessments/short-extensions>.

AI Approach •Open - These assessments do not restrict the application of AI tools. However, it is expected that the use of AI is acknowledged in an appropriate manner, similar to the expectation to provide references for other resources or tools that are used in producing your work. Any use of AI should comply with the University's Responsible and Ethical Use of Artificial Intelligence Policy. •Observed - These tasks are either fully or partly observed or invigilated. AI use will either not be permitted or will be restricted during the assessment. For more information, please see <https://students.mq.edu.au/study/assessment-exams/assessments/ai-and-assessment>

Late Assessment Submission Penalty

Unless a [Special Consideration request](#) has been submitted and approved or a short extension (applicable only on the Project Assessment) has been requested, a **5% penalty** (of the total possible mark of the task) will be applied for each day a written report or presentation assessment is not submitted, up until the 7th day (including weekends). After the 7th day, a grade of '0' will be awarded even if the assessment is submitted. The submission deadline for all uploaded assessments is **11:55 pm** on the due date. A **1-hour grace period** will be provided to students who experience a technical concern. For any late submission of time-sensitive tasks, such as scheduled tests/exams, performance assessments/presentations, and/or scheduled practical assessments/labs, please apply for [Special Consideration](#). For example, if the assignment is worth 8 marks (of the entire unit) and your submission is late by 19 hours (or 23 hours 59 minutes 59 seconds), 0.4 marks (5% of 8 marks) will be deducted. If your submission is late by 24 hours (or 47 hours 59 minutes 59 seconds), 0.8 marks (10% of 8 marks) will be deducted, and so on.

Assessments where Late Submissions will be accepted

- Lab Book --- YES, Standard Late Penalty applies

- Project --- YES, Standard Late Penalty applies
- Final exam --- NO, unless Special Consideration is Granted

Special Consideration

The [Special Consideration Policy](#) aims to support students who have been impacted by short-term circumstances or events that are serious, unavoidable, and significantly disruptive, and which may affect their performance in assessment. If you experience circumstances or events that affect your ability to complete the assessments in this unit on time, please inform the convenor and submit a Special Consideration request through <http://connect.mq.edu.au>.

Supplementary Exam

If you receive [Special Consideration](#) for the final exam, a supplementary exam will be scheduled after the normal exam period, following the release of marks. By making a special consideration application for the final exam, you are declaring yourself available for a resit during the supplementary examination period and will not be eligible for a second special consideration approval based on pre-existing commitments. Please ensure you are familiar with the policy prior to submitting an application.

Assessment Tasks

Name	Weighting	Hurdle	Due	Groupwork/Individual	Short Extension	AI Approach
Project	30%	No	17/09/2026	Individual	Yes	Open
Laboratory Work	30%	No	30/10/2026	Individual	No	Observed
Final exam	40%	No	During Exam Period	Individual	No	Observed

Project

Assessment Type ¹: Portfolio

Indicative Time on Task ²: 36 hours

Due: **17/09/2026**

Weighting: **30%**

Groupwork/Individual: Individual

Short extension ³: Yes

AI Approach: Open

The project tests student's understanding of selected networking and cloud technologies and their usage within an organisation (or across organisations) including issues relating to security.

On successful completion you will be able to:

- Discuss the organisation of physical compute and storage resources.
- Describe the arrangement and operation of physical networks, and the role of network

protocol stacks.

- Demonstrate an understanding of IP addressing, routing and subnetting.
- Describe and use an arrangement and operation of cloud compute and storage resources.
- Describe and use an arrangement and operation of virtual networks.
- Compare and contrast various network management principles and orchestration approaches of cloud compute, communication, and storage resources.

Laboratory Work

Assessment Type ¹: Professional task

Indicative Time on Task ²: 24 hours

Due: **30/10/2026**

Weighting: **30%**

Groupwork/Individual: Individual

Short extension ³: No

AI Approach: Observed

For each practical, you will undertake a mixture of in-class and/or pre-lab activities. You will record your progress and results in a lab book. This lab book must be submitted after the final practical.

On successful completion you will be able to:

- Demonstrate technical networking proficiency including ability to configure, construct, and document, and in simple cases, design networks, as well as the ability to perform traffic analysis on local area networks.

Final exam

Assessment Type ¹: Examination

Indicative Time on Task ²: 15 hours

Due: **During Exam Period**

Weighting: **40%**

Groupwork/Individual: Individual

Short extension ³: No

AI Approach: Observed

You will undertake a final examination during the formal examination period.

On successful completion you will be able to:

- Discuss the organisation of physical compute and storage resources.
- Describe the arrangement and operation of physical networks, and the role of network protocol stacks.

- Demonstrate an understanding of IP addressing, routing and subnetting.
 - Describe and use an arrangement and operation of cloud compute and storage resources.
 - Describe and use an arrangement and operation of virtual networks.
 - Compare and contrast various network management principles and orchestration approaches of cloud compute, communication, and storage resources.
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¹ If you need help with your assignment, please contact:

- the academic teaching staff in your unit for guidance in understanding or completing this type of assessment
- [Academic Success](#) for academic skills support.

² Indicative time-on-task is an estimate of the time required for completion of the assessment task and is subject to individual variation.

³ An automatic short extension is available for some assessments. Apply through the [Service Connect Portal](#).

Delivery and Resources

Classes:

The unit has three different scheduled class types:

- **Lecture.** Lectures begin in week 1. Attendance is recommended but not compulsory. Lectures are generally available via the ECHO360 to livestream or to view at a later date notwithstanding technical issues. They provide the primary introduction for content alongside the prescribed readings (see below for details). The lecture is 2 hours each week. Students enrolled in the "live stream" class for the lecture are welcome to attend the lecture on campus. The lectures are recorded using the ECHO360 platform and recordings (assuming no technical difficulties occur) are made available through the unit iLearn page.
- **SGTA.** In addition to 2-hours of lecture each week, students are encouraged to attend a 1-hour SGTA, and a 2-hour Practical/workshop (except in week 1 as noted above). For details of days, times and locations consult eStudent. SGTAs will be held in an in-person class over 12 weeks: from week 2 to week 13. They are designed to provide students with examples related to lecture material, to relate the lecture material to the practical exercises, and to act as scaffolding for the term project assessment.
- **Practical/Workshop.** In addition to 2-hours of lecture each week, students are encouraged to attend a 1-hour SGTA, and a 2-hour Practical/workshop (except in week 1 as noted above). For details of days, times and locations consult eStudent. Practicals/Workshops will be held on-site over 12 meetings from week 2 to week 13. Practical classes offer the opportunity for students to engage in hands-on activities to apply what has been learned from the readings, lecture materials, and SGTA exercises.

Note that while the practical material is structured to follow the lecture material, students need to keep in mind that there will not always be a one-to-one mapping between the lecture topics and the weekly SGTA and practical exercises. This is because of a need for some practical sessions to introduce new tools and techniques before following on from the related concepts from the readings and lecture materials.

Delivery Time and Location

For details of days, times and rooms, consult your personal timetable on eStudent. For details of scheduled classes, consult the Classfinder tool on eStudent.

Week 1 Classes

In week 1, only the lecture session will take place. SGTAs and Practicals will commence from week 2.

Course Reading Material Information (Leganto)

The textbook for the unit is:

Fitzgerald, J. & Dennis, A, Business Data Communications and Networking, Fourteenth Edition, Wiley, 2021

The university does have a *limited number* of 'seats' available for online access to this textbook (using your OneID to log in) through the Leganto block on iLearn. Any additional reading for the unit will be provided via links accessed via iLearn.

Technologies Used and Required

This unit will be using lab computers for the practical activities, quizzes and exams must be completed on the lab computers. As all the software used in the unit is free of cost, for some activities students will be encouraged to bring their personal laptop computer to class.

Methods of Communication

All announcements about unit-related matters will be communicated through iLearn. It is the student's responsibility to ensure they check iLearn announcements, forums, and FAQ sections regularly. Students are encouraged to use the iLearn forums for asking questions about unit content and concepts.

Students should use the appropriate iLearn forms for contacting staff. There may be occasions where unit staff will email a student directly to their @students.mq.edu.au email address. It is the student's responsibility to ensure they check their official university email regularly for communications from the university staff. Ensure that you read the unit iLearn communications section carefully about where to best direct your query depending on the nature of the query.

Policies and Procedures

Macquarie University policies and procedures are accessible from [Policy Central \(https://policies.mq.edu.au\)](https://policies.mq.edu.au). Students should be aware of the following policies in particular with regard to

Learning and Teaching:

- [Academic Appeals Policy](#)
- [Academic Integrity Policy](#)
- [Academic Progression Policy](#)
- [Assessment Policy](#)
- [Fitness to Practice Procedure](#)
- [Assessment Procedure](#)
- [Complaints Resolution Procedure for Students and Members of the Public](#)
- [Special Consideration Policy](#)

Students seeking more policy resources can visit [Student Policies](https://students.mq.edu.au/support/study/policies) (<https://students.mq.edu.au/support/study/policies>). It is your one-stop-shop for the key policies you need to know about throughout your undergraduate student journey.

To find other policies relating to Teaching and Learning, visit [Policy Central](https://policies.mq.edu.au) (<https://policies.mq.edu.au>) and use the [search tool](#).

Student Code of Conduct

Macquarie University students have a responsibility to be familiar with the Student Code of Conduct: <https://students.mq.edu.au/admin/other-resources/student-conduct>

Results

Results published on platform other than [eStudent](#), (eg. iLearn, Coursera etc.) or released directly by your Unit Convenor, are not confirmed as they are subject to final approval by the University. Once approved, final results will be sent to your student email address and will be made available in [eStudent](#). For more information visit connect.mq.edu.au or if you are a Global MBA student contact globalmba.support@mq.edu.au

Academic Integrity

At Macquarie, we believe [academic integrity](#) – honesty, respect, trust, responsibility, fairness and courage – is at the core of learning, teaching and research. We recognise that meeting the expectations required to complete your assessments can be challenging. So, we offer you a range of resources and services to help you reach your potential, including free [online writing and maths support](#), [academic skills development](#) and [wellbeing consultations](#).

Student Support

Macquarie University provides a range of support services for students. For details, visit <http://students.mq.edu.au/support/>

Academic Success

[Academic Success](#) provides resources to develop your English language proficiency, academic writing, and communication skills.

- [Ask a Study Coach](#)
- [Access StudyWISE](#)
- [Upload an assignment to Studiosity](#)
- [Complete the Academic Integrity Module](#)

The Library provides online and face to face support to help you find and use relevant information resources.

- [Subject and Research Guides](#)
- [Ask a Librarian](#)

Student Services and Support

Macquarie University offers a range of [Student Support Services](#) including:

- [IT Support](#)
- [Accessibility and disability support](#) with study
- Mental health [support](#)
- [Safety support](#) to respond to bullying, harassment, sexual harassment and sexual assault
- [Social support including information about finances, tenancy and legal issues](#)
- [Student Advocacy](#) provides independent advice on MQ policies, procedures, and processes

Student Enquiries

Got a question? Ask us via the [Service Connect Portal](#), or contact [Service Connect](#).

IT Help

For help with University computer systems and technology, visit <https://students.mq.edu.au/support/technology/service-desk>.

When using the University's IT, you must adhere to the [Acceptable Use of IT Resources Policy](#). The policy applies to all who connect to the MQ network including students.

Changes from Previous Offering

We value student feedback to be able to continually improve the way we offer our units. As such, we encourage students to provide constructive feedback via student surveys, to the teaching staff directly, or via the FSE Student Experience & Feedback link in the iLearn page.

Student feedback from the previous offering of this unit was very positive overall, with students pleased with the clarity around assessment requirements and the level of support from teaching staff. As such, no change to the delivery of the unit is planned; however, we will continue to strive to improve the level of support and the level of student engagement.

Unit information based on version 2026.03 of the [Handbook](#)