



TELE3350

Communications Networks

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

School of Engineering

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Disclaimer

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General Information

Unit convenor and teaching staff

Stephen Hanly

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Contact via Email

Credit points

10

Prerequisites

130cp or Admission to MEngElecEng

Corequisites

Co-badged status

Unit description

This unit develops core knowledge and understanding in telecommunications engineering examining the technology, concepts and general principles used in modern data communication networks. The focus is on layers 1 and 2 of the OSI reference model spanning local-area, wide-area, metropolitan and access networks and includes Ethernet, wireless networks, optical networks, time-division multiplexing networks and cellular networks. The unit examines these technologies from a number of different perspectives including physical-layer communications, medium access control (MAC), link-layer, network structure, devices, modelling, performance analysis and quality of service. A practical component gives students skills in using and configuring network equipment and modelling and analysis tools.

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: Critique and compare, using acquired knowledge, different communication technologies and networks.

ULO2: Evaluate the advantages and performance of a range of networking technologies.

ULO3: Demonstrate knowledge of a range of modelling techniques, including mathematical modelling and simulation modelling, including appropriate simulation tools, to design and analyse communication technologies and networks.

ULO4: Design, build and operate networks using switches and routers.

ULO5: Apply a systems perspective in the analysis of networks and communications systems.

ULO6: Effectively collaborate in small groups while solving networking problems.

General Assessment Information

Student Responsibilities

Be familiar with University policy and procedures and act in accordance with those policies and procedures.

It is the responsibility of the student to retain a copy of any work submitted. Students must provide these documents upon request. Copies should be retained until the end of the grade appeal period each term.

The student is to perform the required due diligence for their assessment grade and rectify as soon as possible upon finding any errors.

Grading and Passing Requirement

There are three assessment tasks. In order for students to pass this unit, they must obtain a mark accumulated across all assessments of 50% or greater.

Late Submission Policy

Late Submission Policy

- **5% penalty per day:** If you submit your assessment late, **5% of the total possible marks** will be deducted for each day (including weekends), up to 7 days.
 - *Example 1 (out of 100):* If you score 85/100 but submit 20 hours late, you will lose 5 marks and receive **80/100**.
 - *Example 2 (out of 30):* If you score 27/30 but submit 1 day late, you will lose 1.5 marks and receive **25.5/30**.
- **After 7 days:** Submissions more than 7 days late will receive a **mark of 0**.
- **Extensions:**
 - **Automatic short extension is not available for this unit**
 - **Special Consideration:** If you need more time due to serious issues you must apply for Special Consideration.
- **Late Submission Policy does not apply to Problem-Based Task**

Need help? Review the Special Consideration page [HERE](#)

Problem-based Task

This takes the form of a problem set, which **will take place at 1pm on Tuesday September 8 in a venue to be announced on iLearn**. It will cover material in the first 5 weeks of session.

Practical Report

This will be due in Week 12. It is a portfolio of work accomplished during the weekly practicals. You will record your answers to all the questions on the practical sheets and associated problem sheets and show your working.

Examination

The final examination will be conducted in the formal University exam period.

Notifications

Formal notification of assessment tasks, grading rubrics, and due dates will be posted on iLearn. Although all reasonable measures to ensure the information is accurate, The University reserves the right to make changes without notice. Each student is responsible for checking iLearn for changes and updates.

Practical Report submission and plagiarism policies

The Practical Report must be submitted electronically through iLearn (in pdf format). Submissions will undergo plagiarism checkers using the Turnitin software (where applicable) and any work deemed to have a 30% or higher similarity score may incur an academic penalty. For more details on the policies of academic penalties relating to academic honesty, please refer to the policies and procedures section below.

Submissions are expected to be typed set in a logical layout and sequence. Markers WILL NOT grade poorly organized or illegible scans or drafts. The expected workload includes the preparation of final copies and clear diagrams.

Grading and passing requirements for unit

For further details about grading, please refer below to the policies and procedures section.

In order to pass this unit, a student must obtain a mark of 50 or more for the unit (i.e. obtain a passing grade P/ CR/ D/ HD).

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/>.

Final Examination

If you receive special consideration for the final exam, a supplementary exam will be scheduled by the faculty during a supplementary exam period, typically about 3 to 4 weeks after the normal exam period. 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. Approved applicants will receive an individual notification one week prior to the exam with the exact date and time of their supplementary examination.

Assessment Tasks

Name	Weighting	Hurdle	Due	Groupwork/Individual	Short Extension	AI Approach
Problem set	20%	No	08/09/2026	Individual	No	Observed
Practical Report	30%	No	Week 12	Individual	No	Open
Final Exam	50%	No	In final Exam Period	Individual	No	Observed

Problem set

Assessment Type [1](#): Problem-based task

Indicative Time on Task [2](#): 15 hours

Due: **08/09/2026**

Weighting: **20%**

Groupwork/Individual: Individual

Short extension [3](#): No

AI Approach: Observed

Applying knowledge to solve engineering problems is a key aspect of professional practice. In this assessment, you will complete an in-class problem-based task that requires you to apply concepts and methods developed in the unit. This assessment develops analytical thinking, problem-solving skills, and the ability to apply knowledge under time-constrained conditions.

On successful completion you will be able to:

- Critique and compare, using acquired knowledge, different communication technologies and networks.
- Evaluate the advantages and performance of a range of networking technologies.
- Demonstrate knowledge of a range of modelling techniques, including mathematical modelling and simulation modelling, including appropriate simulation tools, to design and analyse communication technologies and networks.
- Apply a systems perspective in the analysis of networks and communications systems.

Practical Report

Assessment Type [1](#): Practice-based task

Indicative Time on Task [2](#): 25 hours

Due: **Week 12**

Weighting: **30%**

Groupwork/Individual: Individual

Short extension ³: No

AI Approach: Open

Documenting and analysing practical work is an important component of engineering practice. In this assessment, you will prepare a report based on your practical activities, demonstrating your application of concepts and methods from the unit. This assessment develops skills in technical communication, data analysis, and the interpretation of engineering results.

On successful completion you will be able to:

- Design, build and operate networks using switches and routers.
- Apply a systems perspective in the analysis of networks and communications systems.
- Effectively collaborate in small groups while solving networking problems.

Final Exam

Assessment Type ¹: Examination

Indicative Time on Task ²: 32 hours

Due: **In final Exam Period**

Weighting: **50%**

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:

- Critique and compare, using acquired knowledge, different communication technologies and networks.
- Evaluate the advantages and performance of a range of networking technologies.
- Demonstrate knowledge of a range of modelling techniques, including mathematical modelling and simulation modelling, including appropriate simulation tools, to design and analyse communication technologies and networks.
- Apply a systems perspective in the analysis of networks and communications systems.

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

The unit will be delivered via lectures, and practical sessions.

Practical sessions

There will be weekly laboratory sessions, starting in Week 2.

Technology used

Library and internet search engines, word processing and presentation software, switches and routers, Matlab software.

Laboratory Safety

No student will be permitted to enter the laboratory without proper footwear. THONGS OR SANDALS ARE NOT ACCEPTABLE. NO FOOD OR DRINK may be taken into the laboratory.

Suggested reference text book:

Computer Networking James F Kurose & Keith W Ross, 6th Edn, 2012.

Other reference book(s)

Communication Networks A Concise Introduction, by J. Walrand and S. Parekh, Morgan & Claypool Publishers, 2010.

Networking, Second edition, J. S. Beasley, Pearson, 2009.

Data Communications and Networking, 4th Edition by B. A. Forouzan, McGraw-Hill, 2007.

Data and Computer Communications, 9th ed W. Stallings, Pearson, 2012

Lecture and laboratory notes

Lecture notes, laboratory notes, assignments and resources are provided online through iLearn.

Methods of Communication

We will communicate with you via your university email and through announcements on iLearn. Queries to convenors can either be placed on the iLearn discussion board or sent to the unit convenor via the contact email on iLearn.

Unit Schedule

A detailed week by week schedule is available on ilearn

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

The Assignment in the 2025 offering has been replaced by the Problem-Based Task which is an invigilated assessment (ie observed).

Unit information based on version 2026.04 of the [Handbook](#)