



COMP8110

Distributed Systems

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

School of Computing

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General Information

Unit convenor and teaching staff

Young Lee

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Credit points

10

Prerequisites

COMP6250

Corequisites

Co-badged status

Unit description

This unit covers both fundamental issues and recent trends in distributed computing. We examine the complexities of distributed communications systems such as partial failures, shared memory, scheduling problems and multiple clocks. Networking protocols and other industry standards are discussed. Lectures will mostly be expository and conceptual and aim to provide a solid understanding of distributed systems and related enduring issues.

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:** Describe the complexities of distributed system development and approaches to solve those complexities
- ULO2:** Distinguish the goals and architectures of distributed systems
- ULO3:** Explain important issues in modern distributed systems
- ULO4:** Identify applicability of technologies that support distributed applications
- ULO5:** Analyse and design distributed systems

General Assessment Information

Release Dates

- Assignment 1: To be released no later than 21 August.
- Assignment 2: To be released no later than 6 October.

The [University's Academic Integrity policy](#) will be enforced. You may assist your fellow students with general concepts, pointers to resources and useful tools or commands that are publicly available. You may not become involved in any way in helping a fellow student to find the solution to their particular task, nor may you share with them any aspect of the solution of your particular task. If you decide to develop or modify a tool (including software tools, procedures or methods) to assist you in solving your programming task, you may not provide that tool to your fellow students, nor may you publish it.

Each assessment task must be the sole work of the student turning it in. Any cheating will be handled under the [University's Academic Integrity Policy](#).

Requirements to Pass this Unit

To pass this unit you must achieve a total mark equal to or greater than 50%.

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:

Special Consideration: If you need more time due to serious issues and for any assessments, you must apply for Special Consideration.

Assessments where Late Submissions will be accepted

In this unit, late submissions will be accepted as follows:

Major assignments – YES, Standard Late Penalty applies

Final Exam - NO, unless Special Consideration is Granted

Special Consideration

If you experience serious and unavoidable difficulties that affect your ability to meet the due dates for progress or the closing date of an assessment task, you may apply for special consideration as explained at <https://students.mq.edu.au/study/my-study-program/special-consideration>. If the request is accepted, the action may be to grant an extension of the relevant due date(s), or it may be to require you to submit an alternative assessment item.

If you apply for special consideration, please note:

- Apply promptly. Late applications may make it impossible to sensibly offer an extension, and you may risk having to complete a different assessment task which would mean starting from scratch. For example, if you are ill for two days just before the due date, an extension of two days would be reasonable, but that extension cannot be granted more than two days after the due date since the extension end date would have already passed!
- Email the convenor (young.lee@mq.edu.au) and unit lecturer to let us know what is happening. This will make it easier for us to respond in a timely manner.

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>

Where generative AI tools have been used to create or assist in producing assessment content, you must disclose this in your submission. For example, you may include the following statement in the **Acknowledgements** section of your work:

Generative AI tools (e.g., ChatGPT) were used to assist in the preparation of this work, including the generation of text, tables, figures, code, data analysis, or references. All AI-generated content has been reviewed, verified, and edited by the author, who accepts full responsibility for the final submission.

If you are uncertain whether the use of a particular AI tool should be disclosed, you should err on the side of caution and include a disclosure in the Acknowledgements section of your work.

Regardless of the extent of AI use, students remain the authors of their submissions. In particular:

- You must be the creator or originator of the ideas and/or work presented.
- You must make a substantial intellectual contribution to the work.
- You are fully responsible for the accuracy, integrity, and originality of all content submitted, including any content that has been generated or assisted by AI tools.

Assessment Tasks

Name	Weighting	Hurdle	Due	Groupwork/Individual	Short Extension	AI Approach
Technology Report	30%	No	05/09/2026	Individual	Yes	Open
Individual distributed systems development project	30%	No	31/10/2026	Individual	Yes	Open
Final Exam	40%	No	Main Final Exam Period	Individual	No	Observed

Technology Report

Assessment Type ¹: Experiential task

Indicative Time on Task ²: 20 hours

Due: **05/09/2026**

Weighting: **30%**

Groupwork/Individual: Individual

Short extension ³: Yes

AI Approach: Open

In this assessment, students will learn about and analyse distributed systems. Through lectures and workshops, they will gain the necessary technologies and techniques to complete the assessment. Detailed requirements will be provided throughout the session.

On successful completion you will be able to:

- Describe the complexities of distributed system development and approaches to solve those complexities
- Distinguish the goals and architectures of distributed systems
- Identify applicability of technologies that support distributed applications
- Analyse and design distributed systems

Individual distributed systems development project

Assessment Type ¹: Experiential task

Indicative Time on Task ²: 20 hours

Due: **31/10/2026**

Weighting: **30%**

Groupwork/Individual: Individual

Short extension ³: Yes

AI Approach: Open

In this assessment, students will design and implement a distributed system algorithm using the technologies covered in the unit. While the requirements will be provided, students are responsible for determining the implementation details.

On successful completion you will be able to:

- Describe the complexities of distributed system development and approaches to solve those complexities
- Distinguish the goals and architectures of distributed systems
- Explain important issues in modern distributed systems
- Identify applicability of technologies that support distributed applications
- Analyse and design distributed systems

Final Exam

Assessment Type ¹: Examination

Indicative Time on Task ²: 45 hours

Due: **Main Final 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:

- Describe the complexities of distributed system development and approaches to solve those complexities
- Distinguish the goals and architectures of distributed systems
- Explain important issues in modern distributed systems
- Identify applicability of technologies that support distributed applications

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

Each week you should attend a 1.5-hour seminar and a two-hour in-person workshop. Lectures are provided as pre-recorded videos on a weekly basis, which you should watch on relevant topics in your own time before the seminar. Lectures and seminars are a core learning experience where we will discuss the theoretical underpinnings and concepts that are essential to this unit. Seminars are an opportunity for you to engage and interact with a team of teaching staff including the lecturer. Key ideas for assessment tasks (the technical report and individual distributed systems development project in particular) will be discussed from time to time in seminars.

Workshops provide an opportunity for you to ensure your understanding of the key concepts of the unit and develop skills to apply these concepts to practical distributed systems. Workshops combine tutorial-style discussion with practical programming experience, particularly in the later weeks of the session.

Week 1 classes: Lectures, seminars and Workshops begin in Week 1.

iLearn Web Site

All learning materials will be published on iLearn including lecture slides and assessment details.

You are required to check the iLearn website at least once a week to ensure that you are aware of the latest materials available there.

Unit Forum

A forum for unit discussions is provided on iLearn. Students are free to post questions, comments or hints in relation to any aspect of the unit, except that you should avoid posting any questions, hints, comments or solutions that could be interpreted as cheating.

Textbooks*

1. "Distributed Systems: Principles and Paradigms" by Maarten van Steen and Andrew Tanenbaum, 3rd (3.01) edition.
2. "Distributed Systems: Concepts and Design" by George Coulouris, Jean Dollimore, and Tim Kindberg, Addison Wesley, 5th edition.
3. "Distributed and Cloud Computing: From Parallel Processing to the Internet of Things" by Geoffrey C. Fox, Jack Dongarra, and Kai Hwang, 1st edition.

** A soft copy of each of these three books is freely available online through publisher's websites.*

Methods of Communication

We will communicate with you via your university email or through announcements on iLearn. Queries to the teaching staff members including the unit convenor can either be placed on the iLearn discussion board or sent to corresponding email addresses from your university email address.

Unit Schedule

The detailed unit schedule will be available on iLearn. The unit is organised into two 6-week periods, with topics approximately as follows.

Week 1-6: Key distributed concepts, such as System models, Architectures, Communications, Synchronisation and Fault tolerance.

Weeks 7-12: Applied distributed computing models and emerging distributed systems, such as cloud computing, edge computing and the Internet of Things (IoT).

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.

Unit information based on version 2026.02 of the [Handbook](#)