COIT20257 *Distributed Systems: Principles and Development*
Term 3 - 2025

Profile information current as at 21/11/2024 11:41 pm

General Information

Overview
Distributed Systems: Principles and Development you will learn basic principles of distributed systems including architecture, design, and algorithms and how to use these principles in the development of distributed applications. You will explore the significant distributed system characteristics of scalability, heterogeneity, security, and failure handling in addition to the fundamentals of networking, inter-process communication, remote invocation, and operating system support. You will examine different approaches to supporting distributed applications including distributed objects, web services, and peer-to-peer solutions. You will learn about distributed file systems, naming, and data-related aspects of distributed transactions, and data replication. Algorithms associated to timing, and coordination and agreement will also be studied. You will also analyse the areas of mobile and ubiquitous computing and the social impact arising from the ubiquity of distributed systems. You will consolidate the key theoretical material through the computer lab tutorial sessions and development of software applications.

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 unit: COIT20256 Data structures and AlgorithmsAnti-Requisite unit: COIT23005 Distributed Systems
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 3 - 2025

- Brisbane
- Melbourne
- Online
- 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

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 Unit Coordinator self reflection

Feedback
There is a need to gather feedback from students and the teaching team on the newly added content regarding 1) security topics (mutual authentication and symmetrical/asymmetrical cryptography) and 2) the complex distributed system case study, to assess their reception and integration into the course and inform necessary refinements for improved learning outcomes.

Recommendation
Collect feedback from the teaching team and check students' performance on the newly added content on the two topics. If necessary, make proper adjustments/updates to the content.

Feedback from Unit Coordinator self reflection

Feedback
The rise of IoT, demand for low-latency applications, and growth of 5G underscore the importance of incorporating edge computing into the curriculum to equip students with knowledge of efficient and scalable computing solutions.

Recommendation
Introduce the modern distributed computing model of Edge Computing, along with key industry standards. Assess Edge Computing through a simplified case study, such as Smart Farming.

Unit Learning Outcomes

Alignment of Learning Outcomes, Assessment and Graduate Attributes

Information for Alignment of Learning Outcomes, Assessment and Graduate Attributes has not been released yet.
This information will be available on Monday 15 September 2025

Textbooks and Resources

Information for Textbooks and Resources has not been released yet.
This information will be available on Monday 20 October 2025

Academic Integrity Statement

Information for Academic Integrity Statement has not been released yet.
This unit profile has not yet been finalised.