



# COMP1050

## Introduction to the Study of Software Engineering

Session 1, In person-scheduled-weekday, North Ryde 2023

*School of Computing*

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## General Information

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10

Prerequisites

Admission to BEng

Corequisites

Co-badged status

Unit description

This unit covers the fundamentals of software engineering, including understanding system requirements, finding appropriate engineering compromises, learning software engineering culture, forming camaraderie, understanding basic methods of design, coding, and testing, team software development, and the application of engineering tools.

## 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:** Work with version control, configuration management, unit/regression testing, issue tracking, and debugging tools.

**ULO2:** Create a project plan.

**ULO3:** Create and analyse design models.

**ULO4:** Make engineering tradeoffs.

**ULO5:** Demonstrate an understanding of software engineering culture and form camaraderie.

## General Assessment Information

### Requirements to Pass this Unit

To pass this unit you must:

- Pass the *weekly contribution to the workshop* hurdle.
- Attempt both assessments.
- Submit both the interm and final report.
- Take part in the exam.
- Achieve a total mark equal to or greater than 50%

### Late Assessment Submission Penalty

Unless a Special Consideration request has been submitted and approved, a 5% penalty (of the total possible mark) will be applied each day a written assessment is not submitted, up until the 7<sup>th</sup> day (including weekends). After the 7<sup>th</sup> day, a grade of '0' will be awarded even if the assessment is submitted. Submission time for all written assessments is set at **11:55 pm**. A 1-hour grace period is provided to students who experience a technical concern.

For missing any time-sensitive assessments, such as exams and practical assessments, students must submit a request for [Special Consideration](#). This has to be done within five working days of the due date using the application form on [AskMQ](#). It's important to note that submitting a Special Consideration request does not guarantee an additional or alternative assessment. It's crucial to continue working on and completing assessments promptly.

#### Assessments where Late Submissions will be accepted

- Assignment 1 – YES, Standard Late Penalty applies
- Assignment 2 – YES, Standard Late Penalty applies
- Working in teams on a substantial software engineering project:
  - Weekly contribution – NO, unless Special Consideration is granted
  - Interim report – YES, Standard Late Penalty applies
  - Final report – YES, Standard Late Penalty applies

## Assessment Tasks

Name	Weighting	Hurdle	Due
<a href="#">Working in teams on a substantial software engineering project</a>	40%	Yes	Weekly workshop contribution, and 2 reports (week 6 and 12)
<a href="#">Assignment 1</a>	20%	No	Week 7
<a href="#">Assignment 2</a>	20%	No	Week 13
<a href="#">Final Exam</a>	20%	No	Exam period

### Working in teams on a substantial software engineering project

Assessment Type <sup>1</sup>: Participatory task

Indicative Time on Task <sup>2</sup>: 0 hours

Due: **Weekly workshop contribution, and 2 reports (week 6 and 12)**

Weighting: **40%**

**This is a hurdle assessment task (see [assessment policy](#) for more information on hurdle assessment tasks)**

Students work in groups to develop week-by-week a software engineering project, both learning the principles and practices of software engineering, and gaining an overview of a wide range of software engineering areas (that are studied in much greater depth in individual units later in their program).

On successful completion you will be able to:

- Work with version control, configuration management, unit/regression testing, issue tracking, and debugging tools.
- Create a project plan.
- Create and analyse design models.
- Make engineering tradeoffs.
- Demonstrate an understanding of software engineering culture and form camaraderie.

### Assignment 1

Assessment Type <sup>1</sup>: Problem set

Indicative Time on Task <sup>2</sup>: 20 hours

Due: **Week 7**

Weighting: **20%**

An opportunity to demonstrate the learning achieved in the first half of the unit's lectures

On successful completion you will be able to:

- Work with version control, configuration management, unit/regression testing, issue tracking, and debugging tools.
- Create a project plan.

## Assignment 2

Assessment Type **1**: Problem set

Indicative Time on Task **2**: 20 hours

Due: **Week 13**

Weighting: **20%**

An opportunity to demonstrate the learning achieved in the second half of the unit's lectures

On successful completion you will be able to:

- Create and analyse design models.
- Make engineering tradeoffs.

## Final Exam

Assessment Type **1**: Examination

Indicative Time on Task **2**: 19 hours

Due: **Exam period**

Weighting: **20%**

An invigilated examination of the unit's content.

On successful completion you will be able to:

- Work with version control, configuration management, unit/regression testing, issue tracking, and debugging tools.
- Create a project plan.

- Create and analyse design models.
  - Make engineering tradeoffs.
  - Demonstrate an understanding of software engineering culture and form camaraderie.
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<sup>1</sup> 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
- the [Writing Centre](#) for academic skills support.

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

## Delivery and Resources

### Weekly Workshops (includes a hurdle task)

There are weekly workshops where you will be working on the assessment task *Working in teams on a substantial software engineering project*. You will need to conscientiously attend the workshops and engage with the work with your tutor and fellow students. Contribution to the workshop and the group project is a hurdle task meaning that you cannot complete COMP1050 satisfactorily without completing the hurdle task satisfactorily. We expect you to be involved every week, but we know, of course, that you might be ill or something once or twice. You need to be present and actively engaged in at least eight of the twelve sessions to be eligible to meet the hurdle, and if illness or anything else leads you to miss more than four sessions you should speak to the convenor.

Contribution is assessed as follows:

- **Weekly contribution to the workshop:** This entails participation **and** completion of a weekly task. It contributes for (10%) to your final grade. Your *best 10 out of 12* weekly tasks will be used for your grade. **IMPORTANT. This is a hurdle.** If you complete fewer than 8 out of 12 weekly tasks, you will not pass the hurdle requirement. However, if you made a genuine effort on four weekly tasks but still failed to pass the hurdle, you have the option to take a viva examination in the week 13. The viva will cover the exercises completed during the workshops and the *software engineering project*.
- **Interim report:** Due in week 6. It contributes for (10%) to your final grade. It describes the first weeks of the *software engineering project*. This is a collaborative document.
- **Final report:** Due in week 12. It contributes for (20%) to your final grade. It builds on the interim report and describes the entire *software engineering project*. This is a collaborative document.

The "0 hours" estimated time required for that task arises because the task is completed during

your scheduled workshop class (and class hours are recorded separately).

## Lectures

This course includes 2-hour weekly lectures. Attendance at these lectures is highly recommended as they introduce the concepts that will be used in the workshops and will be covered in the assessments for Assignment 1, Assignment 2 and the final exam.

## Assignments

Assignments will play a crucial role in evaluating student understanding. They will be based on the lecture material, workshop activities, and weekly tutorial material and will require students to integrate what they have learned, think critically and creatively.

## Exam

A written exam (held withing the university examination period) is designed to test your understanding of the course content and your application of the concepts to a number of scenarios or problem statements.

## Unit Resources

Although there is no required textbook, we suggest that students read:

- David Farley, *Modern Software Engineering: Doing What Works to Build Better Software Faster*, Addison-Wesley Professional, 2021.

This is a valuable resource for understanding the day-to-day tasks of software engineers and is available in the library in both online and ebook formats. The workshop exercises and accompanying software engineering project are outlined in the workshop manual. Additionally, lecture notes and recordings will be made available after each lecture.

## Unit Schedule

Week	Workshop	Workshop	Deadlines
1	<b>Topics</b> : Degree Introductions + What is Software Engineering?	Forming a team. Discussion and group work.	
2	<b>Topics</b> : SDLC and Software Processes	GitHub project. Markdown	
3	<b>Topics</b> : Requirements and epics, Issue Tracking	Team formation. Project assignment	
4	<b>Topics</b> : Version Control Systems and Debugging	Git. Processing	

5	<b>Topics</b> : Software Testing Code Review	GitHub. Testing and Review.	
6	<b>Topics</b> : Software Testing (Unit and regression),	More testing. Coverage	Project Interim Report Due This Week
7	<b>Topics</b> : Testing in the SDLC, Project Management	Definition of Done. Project Management	Assignment 1 Due
8	<b>Topics</b> : - Software Architecture and Design Models	Composition. Modelling.	
9	<b>Topics</b> : Software modelling and Software Quality	Analysing Processing code. Coupling and Cohesion	
10	<b>Topics</b> : High Level Software Architecture	Beta and acceptance testing of project	
11	<b>Topics</b> : Software Traceability and Configuration Management	Requirements dependency. Project review.	
12	<b>Topics</b> : Professionalism and Ethics	Tutorial project presentation. Final report time.	Project Report Due
13	<b>Topics</b> : Review and project final presentation	Q&A	Assignment 2 Due Vivas
<b>exam period</b>	The University will advise on how these will proceed as we move forward in the Semester. More information will be provided as it becomes available		

Tentative, and subject to adjustments.

## 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 [ask.mq.edu.au](http://ask.mq.edu.au) or if you are a Global MBA student contact [globalmba.support@mq.edu.au](mailto: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/>

## The Writing Centre

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

- [Workshops](#)
- [Chat with a WriteWISE peer writing leader](#)
- [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 [AskMQ](#), or contact [Service Connect](#).

## IT Help

For help with University computer systems and technology, visit [http://www.mq.edu.au/about\\_us/offices\\_and\\_units/information\\_technology/help/](http://www.mq.edu.au/about_us/offices_and_units/information_technology/help/).

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 workshops and the software project.

While the software engineering content is the same as, the order in which topics are covered, the exercises, and the nature of the project changed.

## Lectures

While the topics of the lectures remain the same, the order in which they are covered, and the application examples will change.

## Repeating Students

Students who retake this unit are expected to fully participate in all learning activities, just as first-time students do. Previous participation in the unit does not exempt you from any requirements. Completing homework or assessments in a previous iteration of the unit will not exempt you from completing the assignments again this time around.