



ENGG1050

Engineering Design

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

School of Engineering

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General Information

Unit convenor and teaching staff

Unit Convener

Bandita Mainali

bandita.mainali@mq.edu.au

Contact via bandita.mainali@mq.edu.au

Room 309, 9 Wally's Walk

Appointment via email or Wednesdays from 11 am to 1 pm.

Credit points

10

Prerequisites

ENGG1000

Corequisites

Co-badged status

Unit description

How do engineers turn simple ideas into real solutions? What does it take to work effectively and professionally in a team on real-world challenges? In this unit, you will apply engineering design processes, relevant technical and foundational knowledge to solve open-ended problems in a team-based setting. Through hands-on projects, online modules, and collaborative activities, you will develop essential skills in communication, teamwork, ethics, and reflection. It is your next step in becoming a capable, creative, and globally aware engineer.

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

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: Apply engineering design processes to develop a solution to a real-world

problem.

ULO2: Apply foundational knowledge and technical skills for a given problem domain.

ULO3: Demonstrate and apply collaborative teamwork techniques for a multidisciplinary project design

ULO4: Communicate foundational engineering design ideas and solutions in written and oral formats.

ULO5: Reflect on ethical issues and personal experiences to support professional growth as an emerging engineer.

General Assessment Information

Requirements to Pass this Unit

To pass this unit you must:

Achieve a **total mark** equal to or greater than 50%,

Your active engagement in the unit and the group project is very important. For more information about grading, please refer to the policies and procedures section.

Late submissions

Online quizzes, in-class activities, or scheduled tests must be undertaken at the time indicated in the unit guide. Should these activities be missed due to illness or misadventure, students may apply for Special Consideration.

Late Assessment Submission Penalty

Unless a Special Consideration request has been submitted and approved, 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.

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.

The submission time for all uploaded assessments is **11:55 pm**. A 1-hour grace period will be provided to students who experience technical concerns.

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](#).

Assessments where Late Submissions will be accepted

Mid-Session Test- NO, unless Special Consideration is Granted

Reflection- YES, Standard Late Penalty applies

Project- 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 written assessments in this unit on time, please inform the convenor and submit a Special Consideration request through ask.mq.edu.au.

Short Extensions

For some assessment types, students are allowed to request an extra 3 calendar days to complete eligible assessments. No reason or evidence is required. This only applies to individual assessments with the Short Extension flag in CMS marked as 'yes'. Please ensure that the unit guide specifies whether short extensions apply to any of the assessments in your unit.

Assessment Tasks

Name	Weighting	Hurdle	Due	Groupwork/Individual	Short Extension	AI Approach
Mid-Session Test	25%	No	Week 8	Individual	No	Observed
Reflection	25%	No	16/10/2026	Individual	Yes	Open
Project	50%	No	Week 12 and 13	Individual and Group	No	Open

Mid-Session Test

Assessment Type [1](#): Examination

Indicative Time on Task [2](#): 20 hours

Due: **Week 8**

Weighting: **25%**

Groupwork/Individual: Individual

Short extension [3](#): No

AI Approach: Observed

This test will assess multiple competencies that are integral for all Engineers. The test is based on related topics and materials from designated study texts.

On successful completion you will be able to:

- Apply engineering design processes to develop a solution to a real-world problem.
- Apply foundational knowledge and technical skills for a given problem domain.

Reflection

Assessment Type [1](#): Reflection task

Indicative Time on Task ²: 12 hours

Due: **16/10/2026**

Weighting: **25%**

Groupwork/Individual: Individual

Short extension ³: Yes

AI Approach: Open

This task supports professional development by encouraging reflection on real-world teamwork and design practice. You will critically evaluate your contribution, team dynamics, and learning journey through reflective writing. This assessment helps to build skills in self-awareness, collaboration, and professional communication.

On successful completion you will be able to:

- Reflect on ethical issues and personal experiences to support professional growth as an emerging engineer.

Project

Assessment Type ¹: Portfolio

Indicative Time on Task ²: 60 hours

Due: **Week 12 and 13**

Weighting: **50%**

Groupwork/Individual: Individual and Group

Short extension ³: No

AI Approach: Open

This task reflects real-world engineering practice by applying the design process to a real-world problem. You will develop and evaluate solutions, delivering a technical report and presentation. Through this assessment, you will develop skills in problem-solving, communication, and iterative design thinking.

On successful completion you will be able to:

- Apply engineering design processes to develop a solution to a real-world problem.
- Apply foundational knowledge and technical skills for a given problem domain.
- Demonstrate and apply collaborative teamwork techniques for a multidisciplinary project design
- Communicate foundational engineering design ideas and solutions in written and oral formats.

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

How do engineers turn simple ideas into real solutions? What does it take to work effectively and professionally in a team on real-world challenges? In this unit, you will apply engineering design processes, relevant technical and foundational knowledge to solve open-ended problems in a team-based setting. Through hands-on projects, online modules, and collaborative activities, you will develop essential skills in communication, teamwork, ethics, and reflection. This unit connects your learning to real-world impact, guided by the UN Sustainable Development Goals. It's your next step in becoming a capable, creative, and globally aware engineer. Engagement will be primarily in campus.

Week 1 classes

You have a 3 hr workshop each week starting from WEEK 1 (Wednesday 29th of July or Thursday 30th of July based on your allocated workshop).

Check the details of the workshops on 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

Students are assigned to specific groups. Before the workshop, please check which group you are assigned to, the corresponding workshop timeframe, and the venue. Please see the detailed information on iLearn.

Workshop	Day	Time	Location
Workshop_1/03	Wednesday	09:00-12:00	9 WW G05, G64, 148
Workshop_1/04	Wednesday	13:00-16:00	9 WW G05, G64, 148
Workshop_1/01	Thursday	09:00-12:00	9 WW G05, G64, 148
Workshop_1/02	Thursday	13:00-16:00	9 WW G05, G64, 148

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.

Engineers Australia Competencies Mapping

Type	Description	Unit Learning Outcomes
KNOWLEDGE AND SKILL BASE	1.1 Comprehensive, theory based understanding of the underpinning natural and physical sciences and the engineering fundamentals applicable to the engineering discipline.	
	1.2 Conceptual understanding of the mathematics, numerical analysis, statistics, and Electronic and information sciences which underpin the engineering discipline.	ULO2
	1.3 In-depth understanding of specialist bodies of knowledge within the engineering discipline	
	1.4 Discernment of knowledge development and research directions within the engineering discipline.	
	1.5 Knowledge of engineering design practice and contextual factors impacting the engineering discipline.	ULO1,ULO2
	1.6 Understanding of the scope, principles, norms, accountabilities and bounds of sustainable engineering practice in the specific discipline.	
ENGINEERING APPLICATION ABILITY	2.1 Application of established engineering methods to complex engineering problem solving.	ULO1
	2.2 Fluent application of engineering techniques, tools and resources.	ULO1
	2.3 Application of systematic engineering synthesis and design processes	ULO1, ULO4
	2.4 Application of systematic approaches to the conduct and management of engineering projects.	ULO1
PROFESSIONAL AND PERSONAL ATTRIBUTES	3.1 Ethical conduct and professional accountability.	ULO5
	3.2 Effective oral and written communication in professional and lay domains.	ULO3
	3.3 Creative, innovative and pro-active demeanour.	
	3.4 Professional use and management of information.	
	3.5 Orderly management of self, and professional conduct.	ULO5
	3.6 Effective team membership and team leadership	ULO3

Changes since First Published

Date	Description
21/ 07/ 2026	Information about automated short extension is added under Late Assessment Submission and Penalties heading. In addition to this, Methods of Communication heading has been added to the unit guide.
21/ 07/ 2026	Information on the assessments available for short extensions has been updated.

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