



ENGG3000

Engineering Project Practice

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

School of Engineering

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General Information

Unit convenor and teaching staff

Iain Collings

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Credit points

10

Prerequisites

(ENGG2000 and ENGG2050) or admission to MEngElecEng

Corequisites

Co-badged status

Unit description

In this sixth SPINE unit, you will develop professional, transferable and employability skills through a combination of project-based learning activities, and relevant scaffolding support.

You will apply technical knowledge and structured problem-solving approaches to a real-world inspired engineering project, integrating knowledge gained throughout your degree. Working in teams, you will apply systems thinking to analyse complex engineering challenges, evaluate trade-offs, optimise system performance, and deliver project outcomes while demonstrating leadership, project management, and professional accountability.

You will communicate technical and non-technical information using appropriate formats and consider the broader social, technical, and organisational impacts of engineering decisions. Through project development and handover activities, you will develop the skills required to support the continuation and long-term success of engineering projects.

Learning in this unit enhances your understanding of global challenges identified by the United Nations Sustainable Development Goals (UNSDGs), particularly 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: Demonstrate systems thinking and holistic thinking with an emphasis on trade-off

analysis in all decision-making process.

ULO2: Demonstrate effective communication skill of technical and non-technical knowledge through a range of mediums such as technical documents and elevator pitch.

ULO3: Provide analysis and simulation to optimise the system based on enumerated parameters.

ULO4: Demonstrate leadership and management skills to achieve team deliverables.

ULO5: Ensure project continuation through the synthesis of project documentation and handover documents.

ULO6: Explain and discuss the social and technical impact of engineering and demonstrate continual professional development.

General Assessment Information

Please consult the iLearn page for detail on each assessment task.

RELEASE

Details of all Sprint assessments to be released no later than 27/07/2026.

ASSESSMENT DUE DATES

Assessment sprints are due in weeks 5, 9, and 13 respectively. These will be carried out in allocated workshop times.

REQUIREMENTS TO PASS THIS UNIT

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

LATE ASSESSMENT SUBMISSION

Late assessments are not accepted in this unit unless a [Special Consideration](#) has been submitted and approved.

SPECIAL CONSIDERATIONS AND SHORT EXTENSIONS

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/>.

Short Extensions

Short extension allow students to request an extra 3 calendar days to complete eligible assessments. There are no eligible assessments for short extensions in this unit.

Assessment Tasks

Name	Weighting	Hurdle	Due	Groupwork/Individual	Short Extension	AI Approach
Sprint 3 - The Final Product	40%	No	Week 13	Individual and Group	No	Observed
Sprint 2 - Critical Design Review	35%	No	Week 9	Individual and Group	No	Observed
Sprint 1 - Minimum Viable Product (MVP)	25%	No	Week 5	Individual and Group	No	Observed

Sprint 3 - The Final Product

Assessment Type ¹: Practice-based task

Indicative Time on Task ²: 28 hours

Due: **Week 13**

Weighting: **40%**

Groupwork/Individual: Individual and Group

Short extension ³: No

AI Approach: Observed

You will demonstrate a fully integrated engineering solution and communicate its outcomes to technical and non-technical audiences. You will present and justify design decisions, system performance, and the value of the solution in relation to project objectives. This assessment develops skills in systems integration, professional communication, leadership, and the evaluation of engineering outcomes.

On successful completion you will be able to:

- Demonstrate systems thinking and holistic thinking with an emphasis on trade-off analysis in all decision-making process.
- Demonstrate effective communication skill of technical and non-technical knowledge through a range of mediums such as technical documents and elevator pitch.
- Demonstrate leadership and management skills to achieve team deliverables.
- Explain and discuss the social and technical impact of engineering and demonstrate continual professional development.

Sprint 2 - Critical Design Review

Assessment Type ¹: Practice-based task

Indicative Time on Task ²: 25 hours

Due: **Week 9**

Weighting: **35%**

Groupwork/Individual: Individual and Group

Short extension ³: No

AI Approach: Observed

You will evaluate, refine, and demonstrate an improved prototype based on analysis, testing, and lessons learned from earlier development activities. You will document your contribution to design refinement, technical analysis, and validation activities. This assessment develops skills in engineering analysis, technical communication, self-management, and evidence-based decision-making.

On successful completion you will be able to:

- Demonstrate effective communication skill of technical and non-technical knowledge through a range of mediums such as technical documents and elevator pitch.
- Provide analysis and simulation to optimise the system based on enumerated parameters.
- Demonstrate leadership and management skills to achieve team deliverables.
- Ensure project continuation through the synthesis of project documentation and handover documents.
- Explain and discuss the social and technical impact of engineering and demonstrate continual professional development.

Sprint 1 - Minimum Viable Product (MVP)

Assessment Type ¹: Practice-based task

Indicative Time on Task ²: 17 hours

Due: **Week 5**

Weighting: **25%**

Groupwork/Individual: Individual and Group

Short extension ³: No

AI Approach: Observed

You will develop and demonstrate an early prototype that addresses the core requirements of a project brief. You will document your contribution to the design process, including the development of ideas, subsystem design decisions, and traceability of requirements. This assessment develops skills in creative problem-solving, systems decomposition, teamwork, and engineering documentation.

On successful completion you will be able to:

- Demonstrate systems thinking and holistic thinking with an emphasis on trade-off analysis in all decision-making process.
- Provide analysis and simulation to optimise the system based on enumerated

parameters.

- Ensure project continuation through the synthesis of project documentation and handover documents.

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

WEEK 1 CLASSES

Workshops will commence in Week 1. As with all workshops, this first workshop is critical in meeting your team, being briefed on your project and starting to make progress towards the Sprint 1 prototype assessment in Week 5, just four weeks ahead.

Please arrive at your designated workshop location to receive a whole of class briefing and further instruction.

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

Please consult the iLearn page for further detail.

Policies and Procedures

Macquarie University policies and procedures are accessible from [Policy Central](#) (<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

Significant change has taken place since the 2025 offering.

ENGG2000 and ENGG3000 are no longer co-taught with each other, where students from each unit form part of each team. In this offering, the ENGG2000 and ENGG3000 students will undertake their project independently and at different times.

Multiple projects now exist in each of ENGG2000 and ENGG3000. This still allows some multidisciplinary while also facilitating better alignment of the projects with each discipline.

Group sizes will be considerably smaller, nominally 5.

The assessment structure has changed now to include three project "sprints", in weeks 5, 9, and 13. Teams will be demonstrating progress toward the final product through progressive prototyping.

Engineers Australia Competency Mapping

EA Competency Standard	Unit Learning Outcomes
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Knowledge and Skill Base	1.1 Comprehensive, theory-based understanding of the underpinning fundamentals applicable to the engineering discipline.	
	1.2 Conceptual understanding of underpinning maths, analysis, statistics, computing.	
	1.3 In-depth understanding of specialist bodies of knowledge	
	1.4 Discernment of knowledge development and research directions	
	1.5 Knowledge of engineering design practice	
	1.6 Understanding of scope, principles, norms, accountabilities of sustainable engineering practice.	
Engineering Application Ability	2.1 Application of established engineering methods to complex problem solving	ULO3
	2.2 Fluent application of engineering techniques, tools and resources.	ULO3
	2.3 Application of systematic engineering synthesis and design processes.	ULO1
	2.4 Application of systematic approaches to the conduct and management of engineering projects.	ULO3, ULO5
Professional and Personal Attributes	3.1 Ethical conduct and professional accountability.	ULO6
	3.2 Effective oral and written communication in professional and lay domains.	ULO2
	3.3 Creative, innovative and pro-active demeanour.	ULO6
	3.4 Professional use and management of information.	ULO3
	3.5 Orderly management of self, and professional conduct.	ULO4
	3.6 Effective team membership and team leadership	ULO4

Unit information based on version 2026.03 of the [Handbook](#)