



# ENGG1000

## Introduction to Engineering

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

*School of Engineering*

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### **Disclaimer**

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## General Information

Unit convenor and teaching staff

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Credit points

10

Prerequisites

Corequisites

Co-badged status

Unit description

The 1st SPINE unit aimed to develop professional, transferable and employability skills. The unit has two objectives; 1) to develop the required self-management skills to be successful in the field of engineering. This includes time management skills, professional behaviour, empathy and metacognitive skills. 2) to develop related and transferable hands-on prototyping skills through a series of workshops. In the process, students will be able to contextualise their learning and develop basic fundamental prototyping skills required for them to be involved in a team-based project by the subsequent SPINE unit.

The SPINE units are serious of scaffolded units across the engineering curriculum that aims to develop self-agency and self-efficacy that will help you transition into University study.

## 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 practical skills in prototyping engineering designs.
- ULO2:** Follow safe working procedures when working with others.
- ULO3:** Apply strategies and tools to organise and conduct knowledge discovery independently.
- ULO4:** Work and interact in accordance to the code of ethics and guidelines of engineering accreditation organisations.
- ULO5:** Articulate independent thinking and effectively communicate ideas and concepts.

## General Assessment Information

### Grading and passing requirement for unit

In order to pass this unit, a student must obtain **a mark of 50** or more for the unit (i.e. obtain a passing grade P/ CR/ D/ HD).

There is no hurdle assessment in this unit.

Online quizzes, in-class activities, or scheduled tests and exam 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**.

All other assessments must be submitted by **11:55 pm** on their due date. Should these assessments be missed due to illness or misadventure, **students should apply for Special Consideration**.

### Late Assessment Submission

Late assessments are not accepted in this unit unless a **Special Consideration** has been submitted and approved.

### 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 [ask.mq.edu.au](https://ask.mq.edu.au).

## Assessment Tasks

Name	Weighting	Hurdle	Due
<a href="#">Prototyping skill development 1</a>	20%	No	Week 7

Name	Weighting	Hurdle	Due
Prototyping skill development 2	20%	No	Week 13
Reflective writing	10%	No	Week 7 and Week 13
Professional portfolio on professional development	10%	No	Week 2-13
Weekly Practice-based Tasks	10%	No	Week 2-13
Weekly Quiz	30%	No	Weeks 3, 10

## Prototyping skill development 1

Assessment Type <sup>1</sup>: Design Implementation

Indicative Time on Task <sup>2</sup>: 5 hours

Due: **Week 7**

Weighting: **20%**

Developing the required hands-on competency relating to a chosen engineering field. The hands-on skill development will be translatable across other engineering domains. The skills will be chosen based on a preference selection during week 1. The availability of the skills will be dependent on whether students choose to engage in face-to-face mode or via online medium. Some skills are only available in face-to-face mode.

Example of cross-disciplinary hands-on skills: Technical drawing skill is an underpinning skill in both mechanical and civil engineering design communication.

On successful completion you will be able to:

- Demonstrate practical skills in prototyping engineering designs.
- Follow safe working procedures when working with others.
- Articulate independent thinking and effectively communicate ideas and concepts.

## Prototyping skill development 2

Assessment Type <sup>1</sup>: Design Implementation

Indicative Time on Task <sup>2</sup>: 5 hours

Due: **Week 13**

Weighting: **20%**

This is the 2nd skill development activity. Similar to the 1st skill development, it emphasizes on the hands prototyping skill required in any engineering field. The skill allocation will be assigned in week 1 as well.

The iterative exposure to new skills development is also to develop the required metacognitive skills in being successful with embarking with new knowledge fields. To put it simply is learning to learn.

On successful completion you will be able to:

- Demonstrate practical skills in prototyping engineering designs.
- Follow safe working procedures when working with others.
- Articulate independent thinking and effectively communicate ideas and concepts.

## Reflective writing

Assessment Type <sup>1</sup>: Reflective Writing

Indicative Time on Task <sup>2</sup>: 5 hours

Due: Week 7 and Week 13

Weighting: 10%

Reflective writing on learning experiences and transferable skills gained. Refer to iLearn for more information.

On successful completion you will be able to:

- Apply strategies and tools to organise and conduct knowledge discovery independently.
- Work and interact in accordance to the code of ethics and guidelines of engineering accreditation organisations.
- Articulate independent thinking and effectively communicate ideas and concepts.

## Professional portfolio on professional development

Assessment Type <sup>1</sup>: Portfolio

Indicative Time on Task <sup>2</sup>: 15 hours

Due: Week 2-13

Weighting: 10%

Curate a professional portfolio that demonstrates the development of professional identity, self-improvement and learning artifacts.

On successful completion you will be able to:

- Work and interact in accordance to the code of ethics and guidelines of engineering accreditation organisations.
- Articulate independent thinking and effectively communicate ideas and concepts.

## Weekly Practice-based Tasks

Assessment Type <sup>1</sup>: Practice-based task

Indicative Time on Task <sup>2</sup>: 15 hours

Due: **Week 2-13**

Weighting: **10%**

Development of knowledge and skills requires continual practice at authentic problems and datasets. During each weekly workshop, you will need to complete a set task which will be marked in class.

Each week will be worth 1 mark out of a total of 100

On successful completion you will be able to:

- Demonstrate practical skills in prototyping engineering designs.
- Work and interact in accordance to the code of ethics and guidelines of engineering accreditation organisations.

## Weekly Quiz

Assessment Type <sup>1</sup>: Quiz/Test

Indicative Time on Task <sup>2</sup>: 10 hours

Due: **Weeks 3, 10**

Weighting: **30%**

Weekly Quiz on audio podcasts and other professional development topics

On successful completion you will be able to:

- Follow safe working procedures when working with others.
- Apply strategies and tools to organise and conduct knowledge discovery independently.
- Articulate independent thinking and effectively communicate ideas and concepts.

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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

All slides and materials, recommended book list and pdfs will be provided on iLearn.

## Unit Schedule

Refer to iLearn for detailed schedule

### Week 1

There will be no pracs/SGTAs in week 1. The SGTAs will start from Week 2.

### Methods of Communication

We will communicate with you via your university email or through announcements on iLearn. Queries to convenors can either be placed on the iLearn discussion board or sent to [noushin.nasiri@mq.edu.au](mailto:noushin.nasiri@mq.edu.au) from your **university email** address.

### COVID Information

For the latest information on the University's response to COVID-19, please refer to the Coronavirus infection page on the Macquarie website: <https://www.mq.edu.au/about/coronavirus-faqs>. Remember to check this page regularly in case the information and requirements change during semester. If there are any changes to this unit in relation to COVID, these will be communicated via iLearn.

## 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>). 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>) 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

Changes to quiz and general reflection materials in response to the feedback received from students and staffs

## Engineers Australia Competency Mapping

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

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Unit information based on version 2023.03 of the [Handbook](#)