



# ENGG2000

## Engineering Practice

Session 2, Online-scheduled-weekday 2022

*School of Engineering*

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## General Information

Unit convenor and teaching staff

Nicholas Tse

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Credit points

10

Prerequisites

(COMP115 or COMP1000) and (ENGG100 or ENGG1050)

Corequisites

CIVL2301 or (COMP247 or COMP2250) or (COMP225 or COMP2010) or (ELEC240 or ELEC2040) or (ELEC242 or ELEC2042) or (ELEC260 or MTRN2060) or (ELEC270 or ELEC2070) or (ELEC295 or ELCT2005) or (MECH203 or MECH2003)

Co-badged status

Unit description

The 4th SPINE unit aimed to develop professional, transferable and employability skills. The Unit consists of a series of online modules and integrated project-based learning activities.

Students will be exposed to real engineering projects and be apply and integrate their learnt technical skills in resolving a real-world inspired engineering problem. The working environment will facilitate the development of transferable skills such as effective team working skills and various form of technical communication skills.

Students are expected to apply systems thinking and design thinking in developing an innovative and practical engineering solution for the given problem. They will be expected to work alongside fellow senior students.

## 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 appropriate thinking strategies to achieve creative and innovative engineering solutions.

**ULO2:** Communicate technical information to a diverse range of audiences (including

lay-people and experts in the field) using oral and written communication skills.

**ULO3:** Enumerate project parameters to effectively decompose complex engineering systems into subsystems such that they are objective and measurable.

**ULO4:** Work in a team and apply accountability strategies to ensure team objective is met.

**ULO5:** Apply rigour to the production of traceability documentation of the project.

**ULO6:** Demonstrate effective self-management ability and continual professional development.

## General Assessment Information

### General Assessment Information

#### Grading and passing requirements for unit

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

For further details about grading, please refer to the policies and procedures section.

#### Hurdle Requirements

There will be a "Fitness to Practice (FTP)" hurdle requirement that students must meet in order to pass this unit. Any students who do not meet the professionalism required of the Unit will first be warned formally via email and an in-person meeting. This includes following the given lab safety requirements and adherence to the COVID safety policy. For further details please refer to the policies and procedures section, specifically the Fitness to Practice Procedure.

#### Late Assessment Submission Penalty

From 1 July 2022, Students enrolled in Session-based units with written assessments will have the following university standard late penalty applied. Please see <https://students.mq.edu.au/study/assessment-exams/assessments> for more information.

Unless a Special Consideration request has been submitted and approved, a **20% penalty** (of the total possible mark) will be applied each day a written 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. 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. **You should contact your convenor for any anticipated issues that might prevent you from a timely submission of work.**

Re-submission for any submitted and/or graded work will not be allowed.

Late submission will require justification via an approved [Special Consideration](#) process, if not late penalty procedure will be followed.

## Assessment Tasks

Name	Weighting	Hurdle	Due
<a href="#">Fitness to Practice Hurdle</a>	0%	Yes	Week 13
<a href="#">A1 Online materials</a>	20%	No	Throughout Semester
<a href="#">A2. Reflective writing</a>	10%	No	Week 7 and 13
<a href="#">A3. Portfolio</a>	10%	No	Week 13
<a href="#">A5. Vertically Integrated Project</a>	60%	No	Week 13

### Fitness to Practice Hurdle

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

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

Due: **Week 13**

Weighting: **0%**

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

This non weighted hurdle requires students to demonstrate achievement and compliance with the Engineers Australia Stage 1 Competency. In particular, but not limited to Section 3: Professional and Personal Attributes. This is a "fitness to practice" demonstration task.

On successful completion you will be able to:

- Demonstrate effective self-management ability and continual professional development.

### A1 Online materials

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

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

Due: **Throughout Semester**

Weighting: **20%**

A range of topics delivered via podcasts, video recordings and other reading materials. Periodic online assessment around these topics. Material content will include but not limited to project management, team management, project organisation.

On successful completion you will be able to:

- Apply appropriate thinking strategies to achieve creative and innovative engineering solutions.
- Enumerate project parameters to effectively decompose complex engineering systems into subsystems such that they are objective and measurable.
- Work in a team and apply accountability strategies to ensure team objective is met.
- Apply rigour to the production of traceability documentation of the project.
- Demonstrate effective self-management ability and continual professional development.

## A2. Reflective writing

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

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

Due: **Week 7 and 13**

Weighting: **10%**

Reflective writing on transferable skills learnt. There will be two required submission at two-time points in the semester. Refer to iLearn for more information.

On successful completion you will be able to:

- Work in a team and apply accountability strategies to ensure team objective is met.
- Demonstrate effective self-management ability and continual professional development.

## A3. Portfolio

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

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

Due: **Week 13**

Weighting: **10%**

Continue professional development. A core part of the SPINE unit where students are to continually improve on their Portfolio development.

On successful completion you will be able to:

- Demonstrate effective self-management ability and continual professional development.

## A5. Vertically Integrated Project

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

Indicative Time on Task <sup>2</sup>: 45 hours

Due: **Week 13**

Weighting: **60%**

Working collectively as a team of engineers (different disciplines and years), students are to design, conceive, document, implement and communicate a detailed plan to a multi-disciplinary real-world inspired engineering problem. The work will have multiple subcomponents and milestone and will required teams to peer evaluate. More information on iLearn.

On successful completion you will be able to:

- Apply appropriate thinking strategies to achieve creative and innovative engineering solutions.
- Communicate technical information to a diverse range of audiences (including lay-people and experts in the field) using oral and written communication skills.
- Enumerate project parameters to effectively decompose complex engineering systems into subsystems such that they are objective and measurable.
- Work in a team and apply accountability strategies to ensure team objective is met.
- Apply rigour to the production of traceability documentation of the project.

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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

B. S. Blanchard & W. J. Fabrycky, Systems Engineering and Analysis, Pearson, 5th edition, 2014.

It is expected that every student will have access to this textbook

## Unit Schedule

Refer to ilearn pages for more information.

## 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 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

In response to LEU and other students feedback from previous years, there has been a slight change to the due dates and workload requirement of the unit.

Also, the Engineering challenge was changed to ensure authentic projects are used in running this unit.



## 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.	
	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.	
	2.3 Application of systematic engineering synthesis and design processes.	ULO1, ULO3
	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.	ULO6
	3.2 Effective oral and written communication in professional and lay domains.	ULO2, ULO5
	3.3 Creative, innovative and pro-active demeanour.	
	3.4 Professional use and management of information.	ULO2, ULO5
	3.5 Orderly management of self, and professional conduct.	ULO4, ULO6
	3.6 Effective team membership and team leadership	ULO4