



# ENGG4001

## Professional Practice

Session 1, In person-scheduled-weekday, North Ryde 2025

*School of Engineering*

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#### **Disclaimer**

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## General Information

Unit convenor and teaching staff

Unit Convenor

Rex Di Bona

[rex.dibona@mq.edu.au](mailto:rex.dibona@mq.edu.au)

Contact via Contact via Private message on iLearn

44 Waterloo Road

By appointment

Credit points

10

Prerequisites

ENGG3000

Corequisites

Co-badged status

Unit description

In this professional practice capstone unit students will work as teams of consulting engineers to provide an engineering solution to a real societal need or problem, and which addresses a Sustainable Development Goal (SDG). The teams may be multidisciplinary, as required by the nature of the project, and will source a valuable exposure to an in-depth understanding of the problem, the relevant industry, and the socio-technical and other contexts in which the need or problem arose, and the engineered system or solution required. The teams will be expected to organise, plan, and perform all other tasks associated with good engineering practice, including discussion and reflection around the engineering problem and the engineering process. Individual and collective technical and professional competencies will be demonstrated through the production of a substantial report and presentation for consideration. An appreciation of the various contexts and factors impacting upon engineering practice will be developed.

Learning in this unit enhances student understanding of global challenges identified by the United Nations Sustainable Development Goals ([UNSDGs](#)) Quality Education; 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:** Work productively in teams of professional engineers.

**ULO2:** Effectively and professionally communicate engineering concepts in multiple modes to a range of audiences.

**ULO3:** Develop and deliver a professional engineering report, detailing the problem to be solved, the proposed problem solution, a critique of the solution and the reasons why the solution was chosen or recommended.

**ULO4:** Examine and reflect on the socio-technical and other contexts in which engineering is practiced.

**ULO5:** Exercise professional and self reflective practice.

## General Assessment Information

### Grading and passing requirements for unit

In order to pass this unit, a student must submit a response for all assessment tasks, and 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

Starting from 2nd year and onwards, all SPINE units will be applying a professional hurdle requirement widely known as “Fitness to Practice”. According to the policy, fitness to practice is deemed as exhibiting behaviours that demonstrate professional competence, acceptable professional behaviour, freedom from an impairment, and compliance with program-specific requirements needed for a student to practice properly and safely throughout their Practical, Clinical or Professional program or unit. Failure to demonstrate these qualities will result in students being at risk of not progressing in the professional engineering program regardless of their marks and grades within individual units. Please refer to the University policy for further details.

### 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. The submission time for all uploaded assessments is 11:55 pm. A 1-hour grace period will be 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.

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: Progress Report, Final report (Note, that as these are group reports the penalty will apply to the entire group).*

*Assessments where Late Submissions will NOT be accepted: 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 assessments are required to be submitted through the assessment submission portal on iLearn.

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

## Assessment Tasks

| Name                                       | Weighting | Hurdle | Due            |
|--|-----------|--------|----------------|
| <a href="#">Fitness to Practice Hurdle</a> | 0%        | Yes    | Continuous     |
| <a href="#">Portfolio</a>                  | 10%       | No     | 08/06/2025     |
| <a href="#">Engineering presentation</a>   | 15%       | No     | Week 13        |
| <a href="#">In session quizzes</a>         | 30%       | No     | Multiple Weeks |
| <a href="#">Progress Reports</a>           | 45%       | No     | Week 6/Week 13 |

### Fitness to Practice Hurdle

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

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

Due: **Continuous**

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:

- Exercise professional and self reflective practice.

## Portfolio

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

Indicative Time on Task <sup>2</sup>: 12 hours

Due: **08/06/2025**

Weighting: **10%**

Students will contribute regularly to an individual portfolio, recording a summary of professional practice engagement activities. (Note: the portfolio should be updated regularly, as appropriate depending on the variety of tasks).

On successful completion you will be able to:

- Exercise professional and self reflective practice.

## Engineering presentation

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

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

Due: **Week 13**

Weighting: **15%**

Each group will provide a presentation of their engineering solution

On successful completion you will be able to:

- Work productively in teams of professional engineers.
- Effectively and professionally communicate engineering concepts in multiple modes to a range of audiences.
- Develop and deliver a professional engineering report, detailing the problem to be solved, the proposed problem solution, a critique of the solution and the reasons why the solution was chosen or recommended.
- Examine and reflect on the socio-technical and other contexts in which engineering is practiced.

## In session quizzes

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

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

Due: **Multiple Weeks**

Weighting: **30%**

A series of quizzes to reflect on the information presented in the lectures

On successful completion you will be able to:

- Examine and reflect on the socio-technical and other contexts in which engineering is practiced.
- Exercise professional and self reflective practice.

## Progress Reports

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

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

Due: **Week 6/Week 13**

Weighting: **45%**

Reports about the progress of the group's work. Multiple milestone reports will be used to ensure timely progress is being made by each group.

On successful completion you will be able to:

- Work productively in teams of professional engineers.
- Effectively and professionally communicate engineering concepts in multiple modes to a range of audiences.
- Develop and deliver a professional engineering report, detailing the problem to be solved, the proposed problem solution, a critique of the solution and the reasons why the solution was chosen or recommended.
- Examine and reflect on the socio-technical and other contexts in which engineering is practiced.

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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

Practical Session start in Week 1.

### COMMUNICATIONS

Students are reminded the University will communicate all official notices to you by email to your university email account. Please read your @student.mq.edu.au email regularly, or forward it to an account you do read regularly. All announcements and other communications regarding this unit will be via the unit iLearn website, <https://ilearn.mq.edu.au/> Please do not email unit convenors and other staff directly, but instead use the "Important Private Messages to Unit Contacts" forum on the unit website in iLearn.

### TEXTBOOK

B. S. Blanchard & W. J. Fabrycky, Systems Engineering and Analysis, Pearson, 5th edition, 2014. It is required that every student have access to this textbook. A limited number of copies are available through the library.

### OTHER RESOURCES

All unit resources and communications relating to this unit, including a week-by-week schedule of learning and assessment activities, will be provided via the iLearn unit website.

## 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](https://connect.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/>

## Academic Success

[Academic Success](#) 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 the [Service Connect Portal](#), 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.

## 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.                     | ULO3, ULO4             |
| 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.  | ULO3                   |
|                                      | 2.4 Application of systematic approaches to the conduct and management of engineering projects.                          | ULO3                   |
| Professional and Personal Attributes | 3.1 Ethical conduct and professional accountability.   | ULO4, ULO5             |
|                                      | 3.2 Effective oral and written communication in professional and lay domains.  | ULO2, ULO4             |

|  |   |            |
|--|---|------------|
|  | 3.3 Creative, innovative and pro-active demeanour.        | ULO4, ULO5 |
|  | 3.4 Professional use and management of information.       |            |
|  | 3.5 Orderly management of self, and professional conduct. | ULO1       |
|  | 3.6 Effective team membership and team leadership         | ULO1       |

Unit information based on version 2025.04 of the [Handbook](#)