



# ENGG805

## Engineering Project 1

S1 Day 2018

*Dept of Engineering*

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#### **Disclaimer**

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## General Information

Unit convenor and teaching staff

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Wednesday, 2-4pm

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Credit points

4

Prerequisites

Admission to MEng

Corequisites

Co-badged status

Unit description

Students in this unit will undertake a major project in the field of engineering, under the supervision of an academic member of staff. Where the work is carried out externally at a suitable, industrially-based co-supervisor may be required. At the end of the work a comprehensive research report will be submitted. The communication vehicle for this unit is primarily focused on internal engineering project team communications.

## 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:

Ability to undertake a complex engineering specific research project involving the development of new knowledge, using appropriate technical laboratory skills, data management and synthesis, critical analysis and interpretation of results; culminating in

an effective written dissertation and oral presentation to a variety of audiences in research fora.

Ability to demonstrate an advanced knowledge of contextual factors, research direction, and underpinning information impacting the engineering discipline.

Ability to identify, formulate and solve engineering problems in an ethical manner, including complex and open-ended problems, using established engineering methods, processes, and procedures.

Ability to apply research principles, research methods, and technical standards as well as further learning to identify and provide solutions to complex problems with intellectual independence.

## 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).

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

### Hurdle Requirements

The Preliminary Thesis is a hurdle requirement. A grade of 50% or more in the Preliminary Thesis is a condition of passing this unit. If a student gets a mark of at least 40% in Preliminary Thesis, they will be given a second and final attempt to re-submit this task.

Regular meetings with thesis supervisor is a hurdle requirement. See details in assessment task description.

### Late submissions and Resubmissions

Late submissions will attract a penalty of 10% marks per day. Extenuating circumstances will be considered upon lodgement of a formal notice of disruption of studies.

Resubmissions of work are not allowed after due date.

## Assessment Tasks

Name	Weighting	Hurdle	Due
<u>Preliminary Thesis</u>	70%	Yes	Week 13
<u>Presentation</u>	30%	No	TBA
<u>Meetings with Supervisor</u>	0%	Yes	Week 7 and Week 13

## Preliminary Thesis

Due: **Week 13**

Weighting: **70%**

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

Refer to iLearn for guidelines.

On successful completion you will be able to:

- Ability to undertake a complex engineering specific research project involving the development of new knowledge, using appropriate technical laboratory skills, data management and synthesis, critical analysis and interpretation of results; culminating in an effective written dissertation and oral presentation to a variety of audiences in research fora.
- Ability to demonstrate an advanced knowledge of contextual factors, research direction, and underpinning information impacting the engineering discipline.
- Ability to identify, formulate and solve engineering problems in an ethical manner, including complex and open-ended problems, using established engineering methods, processes, and procedures.
- Ability to apply research principles, research methods, and technical standards as well as further learning to identify and provide solutions to complex problems with intellectual independence.

## Presentation

Due: **TBA**

Weighting: **30%**

Refer to iLearn for guidelines and dates.

On successful completion you will be able to:

- Ability to undertake a complex engineering specific research project involving the development of new knowledge, using appropriate technical laboratory skills, data management and synthesis, critical analysis and interpretation of results; culminating in an effective written dissertation and oral presentation to a variety of audiences in research fora.
- Ability to demonstrate an advanced knowledge of contextual factors, research direction, and underpinning information impacting the engineering discipline.
- Ability to identify, formulate and solve engineering problems in an ethical manner,

including complex and open-ended problems, using established engineering methods, processes, and procedures.

- Ability to apply research principles, research methods, and technical standards as well as further learning to identify and provide solutions to complex problems with intellectual independence.

## Meetings with Supervisor

Due: **Week 7 and Week 13**

Weighting: **0%**

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

Students are expected to meet with their supervisor on a weekly basis after the project commences. Such weekly meetings would generally last at least 15 minutes or more. In order to pass this unit, students must attend at least 2 out of 4 meetings up to Week 7, and at least 3 out of 5 meetings between Week 8 to Week 12. Meetings do not necessarily need to be face-to-face, but may make use of communication technologies such as video conference, or detailed progress updates through Email.

On successful completion you will be able to:

- Ability to undertake a complex engineering specific research project involving the development of new knowledge, using appropriate technical laboratory skills, data management and synthesis, critical analysis and interpretation of results; culminating in an effective written dissertation and oral presentation to a variety of audiences in research fora.
- Ability to demonstrate an advanced knowledge of contextual factors, research direction, and underpinning information impacting the engineering discipline.
- Ability to identify, formulate and solve engineering problems in an ethical manner, including complex and open-ended problems, using established engineering methods, processes, and procedures.
- Ability to apply research principles, research methods, and technical standards as well as further learning to identify and provide solutions to complex problems with intellectual independence.

## Delivery and Resources

### Unit Delivery

This is a project-based unit and has no scheduled lectures or tutorial sessions. Special lectures may be organised and related announcements will be made via iLearn.

### Technology Used and Required

The students are required to discuss with their supervisor about the software/hardware resources required for analysis, simulation, testing and experiments related to their project. In addition, word processing software (MS Word, Latex etc.) will be required to produce the preliminary thesis and MS PowerPoint or equivalent software will be required for presentation slides.

Unit Webpage: Access from the online iLearn System at <http://ilearn.mq.edu.au>

### **Required and Recommended Texts/Materials**

There is not set textbook for this unit. The students are required to discuss with their supervisor regarding required/recommended reading materials, as suited to individual project needs.

### **Logbook**

This unit requires a logbook. The students should maintain an individual logbook which should contain a dated log of day-to-day activities undertaken in relation to the project.

## **Policies and Procedures**

Macquarie University policies and procedures are accessible from [Policy Central](https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central) (<https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central>). 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](#)
- [Grade Appeal Policy](#)
- [Complaint Management Procedure for Students and Members of the Public](#)
- [Special Consideration Policy](#) (**Note:** *The Special Consideration Policy is effective from 4 December 2017 and replaces the Disruption to Studies Policy.*)

Undergraduate students seeking more policy resources can visit the [Student Policy Gateway](https://students.mq.edu.au/support/study/student-policy-gateway) (<https://students.mq.edu.au/support/study/student-policy-gateway>). It is your one-stop-shop for the key policies you need to know about throughout your undergraduate student journey.

If you would like to see all the policies relevant to Learning and Teaching visit [Policy Central](https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central) (<https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central>).

## **Student Code of Conduct**

Macquarie University students have a responsibility to be familiar with the Student Code of Conduct: <https://students.mq.edu.au/study/getting-started/student-conduct>

## Results

Results shown in *iLearn*, 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](#).

## Student Support

Macquarie University provides a range of support services for students. For details, visit <http://students.mq.edu.au/support/>

## Learning Skills

Learning Skills ([mq.edu.au/learningskills](http://mq.edu.au/learningskills)) provides academic writing resources and study strategies to improve your marks and take control of your study.

- [Workshops](#)
- [StudyWise](#)
- [Academic Integrity Module for Students](#)
- [Ask a Learning Adviser](#)

## Student Services and Support

Students with a disability are encouraged to contact the [Disability Service](#) who can provide appropriate help with any issues that arise during their studies.

## Student Enquiries

For all student enquiries, visit Student Connect at [ask.mq.edu.au](http://ask.mq.edu.au)

## 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.

## Graduate Capabilities

### PG - Capable of Professional and Personal Judgment and Initiative

Our postgraduates will demonstrate a high standard of discernment and common sense in their professional and personal judgment. They will have the ability to make informed choices and decisions that reflect both the nature of their professional work and their personal perspectives.

This graduate capability is supported by:

## Learning outcomes

- Ability to undertake a complex engineering specific research project involving the development of new knowledge, using appropriate technical laboratory skills, data management and synthesis, critical analysis and interpretation of results; culminating in an effective written dissertation and oral presentation to a variety of audiences in research fora.
- Ability to demonstrate an advanced knowledge of contextual factors, research direction, and underpinning information impacting the engineering discipline.
- Ability to identify, formulate and solve engineering problems in an ethical manner, including complex and open-ended problems, using established engineering methods, processes, and procedures.
- Ability to apply research principles, research methods, and technical standards as well as further learning to identify and provide solutions to complex problems with intellectual independence.

## Assessment tasks

- Preliminary Thesis
- Presentation
- Meetings with Supervisor

## PG - Discipline Knowledge and Skills

Our postgraduates will be able to demonstrate a significantly enhanced depth and breadth of knowledge, scholarly understanding, and specific subject content knowledge in their chosen fields.

This graduate capability is supported by:

## Learning outcomes

- Ability to undertake a complex engineering specific research project involving the development of new knowledge, using appropriate technical laboratory skills, data management and synthesis, critical analysis and interpretation of results; culminating in an effective written dissertation and oral presentation to a variety of audiences in research fora.
- Ability to demonstrate an advanced knowledge of contextual factors, research direction, and underpinning information impacting the engineering discipline.
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- Ability to apply research principles, research methods, and technical standards as well as further learning to identify and provide solutions to complex problems with intellectual independence.

## **Assessment tasks**

- Preliminary Thesis
- Presentation
- Meetings with Supervisor

## **PG - Critical, Analytical and Integrative Thinking**

Our postgraduates will be capable of utilising and reflecting on prior knowledge and experience, of applying higher level critical thinking skills, and of integrating and synthesising learning and knowledge from a range of sources and environments. A characteristic of this form of thinking is the generation of new, professionally oriented knowledge through personal or group-based critique of practice and theory.

This graduate capability is supported by:

## **Learning outcomes**

- Ability to undertake a complex engineering specific research project involving the development of new knowledge, using appropriate technical laboratory skills, data management and synthesis, critical analysis and interpretation of results; culminating in an effective written dissertation and oral presentation to a variety of audiences in research fora.
- Ability to demonstrate an advanced knowledge of contextual factors, research direction, and underpinning information impacting the engineering discipline.
- Ability to identify, formulate and solve engineering problems in an ethical manner, including complex and open-ended problems, using established engineering methods, processes, and procedures.
- Ability to apply research principles, research methods, and technical standards as well as further learning to identify and provide solutions to complex problems with intellectual independence.

## **Assessment tasks**

- Preliminary Thesis
- Presentation
- Meetings with Supervisor

## PG - Research and Problem Solving Capability

Our postgraduates will be capable of systematic enquiry; able to use research skills to create new knowledge that can be applied to real world issues, or contribute to a field of study or practice to enhance society. They will be capable of creative questioning, problem finding and problem solving.

This graduate capability is supported by:

### Learning outcomes

- Ability to undertake a complex engineering specific research project involving the development of new knowledge, using appropriate technical laboratory skills, data management and synthesis, critical analysis and interpretation of results; culminating in an effective written dissertation and oral presentation to a variety of audiences in research fora.
- Ability to demonstrate an advanced knowledge of contextual factors, research direction, and underpinning information impacting the engineering discipline.
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- Ability to apply research principles, research methods, and technical standards as well as further learning to identify and provide solutions to complex problems with intellectual independence.

### Assessment tasks

- Preliminary Thesis
- Presentation
- Meetings with Supervisor

## PG - Effective Communication

Our postgraduates will be able to communicate effectively and convey their views to different social, cultural, and professional audiences. They will be able to use a variety of technologically supported media to communicate with empathy using a range of written, spoken or visual formats.

This graduate capability is supported by:

### Learning outcomes

- Ability to undertake a complex engineering specific research project involving the development of new knowledge, using appropriate technical laboratory skills, data management and synthesis, critical analysis and interpretation of results; culminating in

an effective written dissertation and oral presentation to a variety of audiences in research fora.

- Ability to demonstrate an advanced knowledge of contextual factors, research direction, and underpinning information impacting the engineering discipline.
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## **Assessment tasks**

- Preliminary Thesis
- Presentation
- Meetings with Supervisor

## **PG - Engaged and Responsible, Active and Ethical Citizens**

Our postgraduates will be ethically aware and capable of confident transformative action in relation to their professional responsibilities and the wider community. They will have a sense of connectedness with others and country and have a sense of mutual obligation. They will be able to appreciate the impact of their professional roles for social justice and inclusion related to national and global issues

This graduate capability is supported by:

## **Learning outcomes**

- Ability to undertake a complex engineering specific research project involving the development of new knowledge, using appropriate technical laboratory skills, data management and synthesis, critical analysis and interpretation of results; culminating in an effective written dissertation and oral presentation to a variety of audiences in research fora.
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## **Assessment tasks**

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- Presentation
- Meetings with Supervisor