



# ENGG860

## Society, Sustainability, and Engineering

S1 Day 2018

*Dept of Engineering*

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#### **Disclaimer**

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## General Information

Unit convenor and teaching staff

Unit Convener

Graeme Gwilliam

[graeme.gwilliam@mq.edu.au](mailto:graeme.gwilliam@mq.edu.au)

Contact via Email

TBA (see iLearn)

Wednesday, 12-2.30pm

Administration

Raheel Hashmi

[raheel.hashmi@mq.edu.au](mailto:raheel.hashmi@mq.edu.au)

Contact via 9850 9130

E6B 114

Wednesday, 2-4pm

Credit points

4

Prerequisites

Admission to MEng

Corequisites

Co-badged status

Unit description

Engineering is the application of science to solve problems in society. As such, engineers must operate within accepted norms of society. Today's global economy and emphasis on corporate responsibility makes the engineers job more complicated. This unit will introduce concepts in engineering around the need for sustainability in engineering in different societal contexts as preparation for incorporating these same issues in real world problems and projects.

## 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:

Demonstrate an understanding of the importance of responsible ethical behaviour as a professional engineer in the community

Demonstrate a knowledge of the purpose of Codes of Ethics in the Engineering Profession

Demonstrate the ability to investigate and objectively report in a professional manner on a major engineering project

Demonstrate an understanding of the important responsibilities held by a professional engineer

## 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.

### 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
<a href="#"><u>Exercise on Virtues</u></a>	30%	No	Week 3-12
<a href="#"><u>Assignment on Code of Ethics</u></a>	30%	No	Week 8
<a href="#"><u>Engineering Error Reporting</u></a>	30%	No	Week 12
<a href="#"><u>Participation and Engagement</u></a>	10%	No	All Session

### Exercise on Virtues

Due: **Week 3-12**

Weighting: **30%**

Speak for no more than 10 minutes on the way human ethical behaviour in an individual is developed and implemented as applied from your personal cultural background, and experience.

On successful completion you will be able to:

- Demonstrate an understanding of the importance of responsible ethical behaviour as a

professional engineer in the community

## Assignment on Code of Ethics

Due: **Week 8**

Weighting: **30%**

Obtain a copy of a Code of Ethics from either the Institution of Engineering Technology (IET) or the Institute of Electrical and Electronic Engineers. In no more than 2000 words explain how you interpret this document as it relate to yourself as a practising engineer.

On successful completion you will be able to:

- Demonstrate a knowledge of the purpose of Codes of Ethics in the Engineering Profession

## Engineering Error Reporting

Due: **Week 12**

Weighting: **30%**

Assignment on Engineering error or accident reporting. Investigate and prepare a summary report on a major engineering project where considerable damage and loss of life has resulted from the way in which the work was carried out or operated; This investigation should include any reports from Coroners, Royal Commissions, etc.; In no more than 2000 words explain how you consider the situation could have been handled with a better outcome. Provide details of all references used.

On successful completion you will be able to:

- Demonstrate the ability to investigate and objectively report in a professional manner on a major engineering project
- Demonstrate an understanding of the important responsibilities held by a professional engineer

## Participation and Engagement

Due: **All Session**

Weighting: **10%**

Refer to iLearn for guidelines.

On successful completion you will be able to:

- Demonstrate an understanding of the importance of responsible ethical behaviour as a professional engineer in the community
- Demonstrate a knowledge of the purpose of Codes of Ethics in the Engineering

Profession

- Demonstrate the ability to investigate and objectively report in a professional manner on a major engineering project
- Demonstrate an understanding of the important responsibilities held by a professional engineer

## Delivery and Resources

The unit convener will provide web links to reading material and lecture handouts for self-study.

## 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](https://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

- Demonstrate an understanding of the importance of responsible ethical behaviour as a professional engineer in the community
- Demonstrate a knowledge of the purpose of Codes of Ethics in the Engineering Profession

- Demonstrate the ability to investigate and objectively report in a professional manner on a major engineering project
- Demonstrate an understanding of the important responsibilities held by a professional engineer

### **Assessment tasks**

- Exercise on Virtues
- Assignment on Code of Ethics
- Engineering Error Reporting
- Participation and Engagement

## **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**

- Demonstrate a knowledge of the purpose of Codes of Ethics in the Engineering Profession
- Demonstrate the ability to investigate and objectively report in a professional manner on a major engineering project
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## **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

- Demonstrate an understanding of the importance of responsible ethical behaviour as a professional engineer in the community
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## Assessment tasks

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## 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

- Demonstrate a knowledge of the purpose of Codes of Ethics in the Engineering Profession
- Demonstrate the ability to investigate and objectively report in a professional manner on a major engineering project

## Assessment tasks

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## 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

- Demonstrate an understanding of the importance of responsible ethical behaviour as a



professional engineer in the community

- Demonstrate a knowledge of the purpose of Codes of Ethics in the Engineering Profession
- Demonstrate the ability to investigate and objectively report in a professional manner on a major engineering project
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