ENGG1050

Engineering Design

Session 2, Special circumstance 2020

School of Engineering

Contents

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Notice

As part of Phase 3 of our return to campus plan, most units will now run tutorials, seminars and other small group learning activities on campus for the second half-year, while keeping an online version available for those students unable to return or those who choose to continue their studies online.

To check the availability of face-to-face and online activities for your unit, please go to timetable viewer. To check detailed information on unit assessments visit your unit's iLearn space or consult your unit convenor.

General Information

Unit convenor and teaching staff
Convenor
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Credit points
10

Prerequisites
ENGG1000

Corequisites

Co-badged status

Unit description
The 2nd SPINE unit aimed to develop professional, transferable and employability skills. The unit consists of a series of online modules, electoral and project-based learning activities. This unit introduces engineering challenges that demand the students to apply fundamental knowledge in resolving ill-defined engineering problems. Students will be exposed to a team-based working environment that is representative of any working engineering groups. Through project-based learning and scaffolded activities, students will develop the competencies and transferable skills required to tackle more advance and domain-specific engineering problems.

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: Evaluate an engineering problem and enumerate related constraints and requirements.

ULO2: Communicate an engineering problem and associated solutions professionally, both orally and in writing.

ULO3: Employ strategies to collaborate effectively with a team on solving an engineering problem.

ULO4: Apply the structured engineering design process framework in defining and solving imprecisely defined engineering problems.

ULO5: Apply constructive techniques to reflect upon positive and negative experiences for personal and professional growth.

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 to the policies and procedures section.

Hurdle Requirements

Participation in workshop sessions is a hurdle requirement. Students are required to attend at least 8/12 workshop sessions to pass this unit.

Assessment Tasks

Name	Weighting	Hurdle	Due
A0. Attendance	0%	Yes	Week 13
A1. Professional development	20%	No	Week 13
A2. Technical Writting	15%	No	Week 10
A3. Periodic Quizzes	20%	No	Week 3,7,9,12
A4sc. Project 1	45%	No	Week 13

A0. Attendance

Assessment Type [1]: Participatory task
Indicative Time on Task [2]: 1 hours

Due: **Week 13**
Weighting: **0%**
This is a hurdle assessment task (see assessment policy for more information on hurdle assessment tasks)

Hurdle requirement, Students need to demonstrate satisfactory participation and contribution in workshop activities across session.

On successful completion you will be able to:
- Employ strategies to collaborate effectively with a team on solving an engineering problem.

A1. Professional development

Assessment Type [1]: Portfolio
Indicative Time on Task [2]: 2 hours
Due: **Week 13**
Weighting: **20%**

Professional development and portfolio managing. As a part of the development of professional identity and personal development, students are required to participate in a range of professional development activities which may include attending seminars by industry experts or demonstrate contribution towards student society.

On successful completion you will be able to:
- Communicate an engineering problem and associated solutions professionally, both orally and in writing.
- Apply constructive techniques to reflect upon positive and negative experiences for personal and professional growth.

A2. Technical Writting

Assessment Type [1]: Report
Indicative Time on Task [2]: 5 hours
Due: **Week 10**
Weighting: **15%**

Students will be required to collect data and present technical data and experimental design in a

technical report.

On successful completion you will be able to:

- Communicate an engineering problem and associated solutions professionally, both orally and in writing.

A3. Periodic Quizzes

Assessment Type [1]: Quiz/Test
Indicative Time on Task [2]: 2.5 hours
Due: **Week 3,7,9,12**
Weighting: **20%**

Ongoing fortnightly online quizzes on podcast related topics and materials from designated study texts.

On successful completion you will be able to:

- Evaluate an engineering problem and enumerate related constraints and requirements.
- Apply the structured engineering design process framework in defining and solving imprecisely defined engineering problems.
- Apply constructive techniques to reflect upon positive and negative experiences for personal and professional growth.

A4sc. Project 1

Assessment Type [1]: Project
Indicative Time on Task [2]: 4 hours
Due: **Week 13**
Weighting: **45%**

This is the first of many team-based project vehicles within the SPINE units. Students are required to apply strategies learnt in this unit and apply hands-on skills when required to work as a team to solve an engineering challenge. Students will have weekly deliverables and project milestones and will be required to present at the end of the project.

On successful completion you will be able to:

- Evaluate an engineering problem and enumerate related constraints and requirements.

- Communicate an engineering problem and associated solutions professionally, both orally and in writing.
- Employ strategies to collaborate effectively with a team on solving an engineering problem.
- Apply the structured engineering design process framework in defining and solving imprecisely defined engineering problems.

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[1] 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.

[2] 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

Access information on this unit on iLearn at https://ilearn.mq.edu.au/login/MQ/

Some resources to start with:

Useful books Engineering Your Future: An Australasian Guide; Dowling, Carew, Hadgraft; John Wiley & Sons Australia, Ltd.; 2nd Ed (2013).

To Engineer is Human, Henry Petroski; several publishers and editions starting 1985.

Useful URLs www.engineersaustralia.org.au

Useful videos: Google Scholar This video provides a quick introduction to Google Scholar and how to search it effectively. It also shows how to access it to ensure you link to full-text material which Macquarie University Library already subscribes to. https://www.youtube.com/watch?v=jI5ixQmCXDU&feature=youtu.be How to find a government report This short video provides you with tips and tricks for finding government reports easily using Google https://www.youtube.com/watch?v=2vqS4P_Q2z8 Acknowledging the words and ideas of others This video introduces referencing the ideas and works of others, copyright and creative commons licencing. https://www.youtube.com/watch?v=QXlo98z_yFs

Unit Schedule

Refer to iLearn for unit schedule.

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). 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.)*

Students seeking more policy resources can visit the 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).

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 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 or if you are a Global MBA student contact globalmba.support@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) provides academic writing resources and study strategies to help you improve your marks and take control of your study.

- Getting help with your assignment

- Workshops

- StudyWise

- 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

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

If you are a Global MBA student contact globalmba.support@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/.

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

Similar to previous offering, however, there are changes to the method of offering and assessment weighting. Please refer to iLearn for any additional information.