



ENGG100

Introduction to Engineering

S1 Day 2016

Dept of Engineering

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Disclaimer

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General Information

Unit convenor and teaching staff

Unit Convenor/Lecturer

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Unit Convenor/Lecturer

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Tue 2-4pm

Credit points

3

Prerequisites

Corequisites

Co-badged status

Unit description

This unit involves a series of lectures, laboratory sessions, self-study, group work and other activities centred around a set of projects. Students learn about the process of engineering such as solving ill-defined problems, constrained design, and product development by working in groups on a sequence of projects. The unit also gives students an opportunity to develop and practise generic skills such as written and oral communication.

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:

Students will be able to self-evaluate their skills and abilities and demonstrate their capability for self-directed learning.

Students will be able demonstrate integrity through their display of knowledge with regard to organisational code of ethics and ethical behaviours.

Students will be able to demonstrate structured thinking processes when solving engineering problems.

Students will be able to follow regulatory standards and policies and are aware of the purpose of Engineers Australia.

Students will be able to demonstrate effective written and oral communication skills.

General Assessment Information

- In order to pass this unit, students must achieve **an overall mark of 50%, including satisfactory performance in all aspects of the unit** including the final examination.
- Attendances of workshop sessions are compulsory. **A minimum of 75% of workshops must be attended to be eligible for the sitting of the final exam.**
- Student's attendance is based on workshop participation. **All class activities are to be dated and documented in a bounded A4 book.**
- Any student who **misses 20 mins of a workshop will be deemed** absent for that workshop.

Assessment Tasks

Name	Weighting	Due
<u>A1 Online diagnostic quiz</u>	3%	13/3/16
<u>A2 Learning style evaluation</u>	5%	19/3/16
<u>A3 Class Test</u>	10%	4/4/16
<u>A4 First laboratory report</u>	5%	16/4/16
<u>A5 Report, group presentations</u>	12%	Week 9
<u>A6 Failure analysis report</u>	7%	21/5/16
<u>A7 Report, group presentations</u>	18%	Week 13
<u>A8 Participation and Engagment</u>	10%	End of Session 1
<u>A9 Final Examination</u>	30%	Exams period 14-30 Jun 2016

A1 Online diagnostic quiz

Due: **13/3/16**

Weighting: **3%**

Quiz on mathematics, unit conversions and other assumed knowledge. This is a diagnostic test for assumed knowledge needed for the MQ Engineering degree.

On successful completion you will be able to:

- Students will be able to self-evaluate their skills and abilities and demonstrate their capability for self-directed learning.
- Students will be able demonstrate integrity through their display of knowledge with regard to organisational code of ethics and ethical behaviours.

A2 Learning style evaluation

Due: **19/3/16**

Weighting: **5%**

A 500-word short essay on your learning style. Online survey must be first completed before completing this essays. To be submitted on iLearn via Turnitin.

On successful completion you will be able to:

- Students will be able to self-evaluate their skills and abilities and demonstrate their capability for self-directed learning.
- Students will be able to demonstrate effective written and oral communication skills.

A3 Class Test

Due: **4/4/16**

Weighting: **10%**

Written test in lecture.

On successful completion you will be able to:

- Students will be able demonstrate integrity through their display of knowledge with regard to organisational code of ethics and ethical behaviours.
- Students will be able to demonstrate structured thinking processes when solving engineering problems.
- Students will be able to follow regulatory standards and policies and are aware of the purpose of Engineers Australia.
- Students will be able to demonstrate effective written and oral communication skills.

A4 First laboratory report

Due: **16/4/16**

Weighting: **5%**

Experimental report on material's mechanical testing. The report must adhere to the given standard template.

On successful completion you will be able to:

- Students will be able to demonstrate structured thinking processes when solving engineering problems.
- Students will be able to demonstrate effective written and oral communication skills.

A5 Report, group presentations

Due: **Week 9**

Weighting: **12%**

Group Project (Week 6-9) Assessment marks includes:

- Weekly group submission
- Group attendance
- Final group presentation

All marks will be moderated by a peer assessment process.

On successful completion you will be able to:

- Students will be able to demonstrate structured thinking processes when solving engineering problems.
- Students will be able to demonstrate effective written and oral communication skills.

A6 Failure analysis report

Due: **21/5/16**

Weighting: **7%**

A report on an engineering failure.

On successful completion you will be able to:

- Students will be able demonstrate integrity through their display of knowledge with regard to organisational code of ethics and ethical behaviours.
- Students will be able to demonstrate structured thinking processes when solving

engineering problems.

- Students will be able to demonstrate effective written and oral communication skills.

A7 Report, group presentations

Due: **Week 13**

Weighting: **18%**

Group Project (Week 10-13) Assessment marks includes:

- Weekly group submission
- Group attendance
- Final group report
- Final group presentation

All marks will be moderated by a peer assessment process.

On successful completion you will be able to:

- Students will be able to demonstrate structured thinking processes when solving engineering problems.
- Students will be able to demonstrate effective written and oral communication skills.

A8 Participation and Engagement

Due: **End of Session 1**

Weighting: **10%**

In class participation during week 2-5 (non-project weeks). Participation and engagement will be evaluated based on work documented in a designated ENGG100 bounded lab book. No electronic versions and works will be accepted as a part of the evaluation.

On successful completion you will be able to:

- Students will be able to demonstrate structured thinking processes when solving engineering problems.
- Students will be able to demonstrate effective written and oral communication skills.

A9 Final Examination

Due: **Exams period 14-30 Jun 2016**

Weighting: **30%**

Students are encouraged to check the examination dates at www.timetables.mq.edu.au.

On successful completion you will be able to:

- Students will be able to self-evaluate their skills and abilities and demonstrate their capability for self-directed learning.
- Students will be able demonstrate integrity through their display of knowledge with regard to organisational code of ethics and ethical behaviours.
- Students will be able to demonstrate structured thinking processes when solving engineering problems.
- Students will be able to follow regulatory standards and policies and are aware of the purpose of Engineers Australia.
- Students will be able to demonstrate effective written and oral communication skills.

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.; 2ndEd (2013).

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

Useful URLs

www.engineersaustralia.org.au

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 Macquarie University Library already subscribe to.

<https://www.youtube.com/watch?v=jl5ixQmCXDU&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

Policies and Procedures

Macquarie University policies and procedures are accessible from [Policy Central](#). Students should be aware of the following policies in particular with regard to Learning and Teaching:

Academic Honesty Policy http://mq.edu.au/policy/docs/academic_honesty/policy.html

New Assessment Policy in effect from Session 2 2016 http://mq.edu.au/policy/docs/assessment/policy_2016.html. For more information visit http://students.mq.edu.au/events/2016/07/19/new_assessment_policy_in_place_from_session_2/

Assessment Policy prior to Session 2 2016 <http://mq.edu.au/policy/docs/assessment/policy.html>

Grading Policy prior to Session 2 2016 <http://mq.edu.au/policy/docs/grading/policy.html>

Grade Appeal Policy <http://mq.edu.au/policy/docs/gradeappeal/policy.html>

Complaint Management Procedure for Students and Members of the Public http://www.mq.edu.au/policy/docs/complaint_management/procedure.html

Disruption to Studies Policy http://www.mq.edu.au/policy/docs/disruption_studies/policy.html *The Disruption to Studies Policy is effective from March 3 2014 and replaces the Special Consideration Policy.*

In addition, a number of other policies can be found in the [Learning and Teaching Category](#) of 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/support/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) 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

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.

Graduate Capabilities

Creative and Innovative

Our graduates will also be capable of creative thinking and of creating knowledge. They will be imaginative and open to experience and capable of innovation at work and in the community. We want them to be engaged in applying their critical, creative thinking.

This graduate capability is supported by:

Learning outcome

- Students will be able to demonstrate structured thinking processes when solving engineering problems.

Assessment tasks

- A2 Learning style evaluation
- A5 Report, group presentations
- A7 Report, group presentations
- A8 Participation and Engagement
- A9 Final Examination

Capable of Professional and Personal Judgement and Initiative

We want our graduates to have emotional intelligence and sound interpersonal skills and to demonstrate discernment and common sense in their professional and personal judgement. They will exercise initiative as needed. They will be capable of risk assessment, and be able to handle ambiguity and complexity, enabling them to be adaptable in diverse and changing environments.

This graduate capability is supported by:

Learning outcomes

- Students will be able to self-evaluate their skills and abilities and demonstrate their capability for self-directed learning.
- Students will be able demonstrate integrity through their display of knowledge with regard to organisational code of ethics and ethical behaviours.
- Students will be able to demonstrate structured thinking processes when solving engineering problems.
- Students will be able to follow regulatory standards and policies and are aware of the purpose of Engineers Australia.

Assessment tasks

- A1 Online diagnostic quiz
- A3 Class Test
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Commitment to Continuous Learning

Our graduates will have enquiring minds and a literate curiosity which will lead them to pursue knowledge for its own sake. They will continue to pursue learning in their careers and as they participate in the world. They will be capable of reflecting on their experiences and relationships with others and the environment, learning from them, and growing - personally, professionally and socially.

This graduate capability is supported by:

Learning outcome

- Students will be able to self-evaluate their skills and abilities and demonstrate their capability for self-directed learning.

Assessment tasks

- A1 Online diagnostic quiz
- A2 Learning style evaluation
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Discipline Specific Knowledge and Skills

Our graduates will take with them the intellectual development, depth and breadth of knowledge, scholarly understanding, and specific subject content in their chosen fields to make them competent and confident in their subject or profession. They will be able to demonstrate, where relevant, professional technical competence and meet professional standards. They will be able to articulate the structure of knowledge of their discipline, be able to adapt discipline-specific knowledge to novel situations, and be able to contribute from their discipline to inter-disciplinary solutions to problems.

This graduate capability is supported by:

Learning outcomes

- Students will be able to self-evaluate their skills and abilities and demonstrate their capability for self-directed learning.
- Students will be able demonstrate integrity through their display of knowledge with regard to organisational code of ethics and ethical behaviours.

Assessment tasks

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Critical, Analytical and Integrative Thinking

We want our graduates to be capable of reasoning, questioning and analysing, and to integrate and synthesise learning and knowledge from a range of sources and environments; to be able to critique constraints, assumptions and limitations; to be able to think independently and systemically in relation to scholarly activity, in the workplace, and in the world. We want them to have a level of scientific and information technology literacy.

This graduate capability is supported by:

Learning outcomes

- Students will be able to self-evaluate their skills and abilities and demonstrate their capability for self-directed learning.
- Students will be able demonstrate integrity through their display of knowledge with regard to organisational code of ethics and ethical behaviours.
- Students will be able to demonstrate structured thinking processes when solving engineering problems.

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Problem Solving and Research Capability

Our graduates should be capable of researching; of analysing, and interpreting and assessing data and information in various forms; of drawing connections across fields of knowledge; and they should be able to relate their knowledge to complex situations at work or in the world, in order to diagnose and solve problems. We want them to have the confidence to take the initiative in doing so, within an awareness of their own limitations.

This graduate capability is supported by:

Learning outcomes

- Students will be able to self-evaluate their skills and abilities and demonstrate their capability for self-directed learning.
- Students will be able to demonstrate structured thinking processes when solving engineering problems.

Assessment tasks

- A2 Learning style evaluation
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Effective Communication

We want to develop in our students the ability to communicate and convey their views in forms effective with different audiences. We want our graduates to take with them the capability to

read, listen, question, gather and evaluate information resources in a variety of formats, assess, write clearly, speak effectively, and to use visual communication and communication technologies as appropriate.

This graduate capability is supported by:

Learning outcomes

- Students will be able to self-evaluate their skills and abilities and demonstrate their capability for self-directed learning.
- Students will be able to demonstrate effective written and oral communication skills.

Assessment tasks

- A2 Learning style evaluation
- A3 Class Test
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Engaged and Ethical Local and Global citizens

As local citizens our graduates will be aware of indigenous perspectives and of the nation's historical context. They will be engaged with the challenges of contemporary society and with knowledge and ideas. We want our graduates to have respect for diversity, to be open-minded, sensitive to others and inclusive, and to be open to other cultures and perspectives: they should have a level of cultural literacy. Our graduates should be aware of disadvantage and social justice, and be willing to participate to help create a wiser and better society.

This graduate capability is supported by:

Learning outcomes

- Students will be able demonstrate integrity through their display of knowledge with regard to organisational code of ethics and ethical behaviours.
- Students will be able to follow regulatory standards and policies and are aware of the purpose of Engineers Australia.

Assessment tasks

- A3 Class Test
- A6 Failure analysis report
- A9 Final Examination

Socially and Environmentally Active and Responsible

We want our graduates to be aware of and have respect for self and others; to be able to work with others as a leader and a team player; to have a sense of connectedness with others and country; and to have a sense of mutual obligation. Our graduates should be informed and active participants in moving society towards sustainability.

This graduate capability is supported by:

Learning outcomes

- Students will be able demonstrate integrity through their display of knowledge with regard to organisational code of ethics and ethical behaviours.
- Students will be able to follow regulatory standards and policies and are aware of the purpose of Engineers Australia.

Assessment tasks

- A3 Class Test
- A6 Failure analysis report
- A9 Final Examination

Changes since First Published

Date	Description
18/02/2016	Revised teaching schedule and contact details.