ENGG100

Introduction to Engineering

S2 Day 2016

Dept of Engineering

Contents

General Information

Unit convenor and teaching staff
Unit Convenor/Lecturer
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In Class/ booking via email

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

Student Responsibilities

Be familiar with University policy and College procedures and act in accordance with those policy and procedures.

It is the responsibility of the student to retain a copy of any work submitted. Students must produce these documents upon request. Copies should be retained until the end of the grade appeal period each term.

Student is to perform the required due diligent for their assessment grade and rectify as soon as possible upon finding any errors.

Notifications

Formal notification of assessment tasks, grading rubrics and due dates will be posted on iLearn. Although all reasonable measures to ensure the information is accurate, The University reserves the right to make changes without notice. Each student is responsible for checking iLearn for changes and updates.

Report and Assignment Tasks

Assignment Problems will be posted on iLearn at least two weeks before their submission date. Assignment solutions and feedback will be posted within two weeks after the submission date. Submissions will not be accepted once the solution is posted.

Plagiarism Policies

All assignments and reports must be submitted electronically through iLearn (in pdf format). Submissions will undergo automatic plagiarism checking. For more details on the policies of academic penalties relating to academic honesty, please refer to the policies and procedures section below.

Assignment Submissions

Submissions are expected to be typed set in a logical layout and sequence. Markers WILL NOT grade poorly organized or illegible scans or drafts. The expected workload includes preparation of final copies and clear diagrams.

Late Submissions

Late submissions or absences from tutorials and laboratories will not be accepted without prior

arrangement made at least one week before the submission date. Extenuating circumstances will be considered upon lodgement of a formal notice of disruption of studies.

Hurdle Requirement

The final examination is a hurdle requirement because it is the only reliable assessment of individual performance for this unit. A passing grade of 50% or more in the final examination is a condition of passing this unit. Students who make a serious attempt but fail to meet the hurdle requirement will be given one further opportunity to pass. A serious attempt is defined as achievement of a mark of 40% or greater.

Grading And Passing Requirement For Unit

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

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).

Final Examinations

Final examinations will typically take place at the end of the semester. For further information, please refer to the Examination Timetable website on www.mq.edu.au

Assessment Tasks

Name	Weighting	Due
A1 Diagnostics Quiz	3%	Week 2
A2 Class Examination	7%	Week 5
A3 Experimental Report	7%	Week 6
A4 Group project 1	12%	Week 9
A5 Failure analysis report	13%	Week 10
A6 Group Project 2	18%	Week 13
A7 Final Examination	40%	Exams period 14-30 Jun 2016

A1 Diagnostics Quiz

Due: **Week 2**
Weighting: **3%**

A range of questions online quiz for self-assessment purpose. The topics will include fundamental level of maths, university policy and regulations and basic English competency. Submitted online via iLearn. This will provide feedback to student's potential ability in this course.

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 Class Examination

Due: **Week 5**
Weighting: **7%**

In-class examination during lecture time slot on questions and activities relating to the workshops and the lectures from week 1 to 4.

On successful completion you will be able to:

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

A3 Experimental Report

Due: **Week 6**
Weighting: **7%**

Experimental report on in class tensile testing demonstration. The report must adhere to the given standard template.

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 effective written and oral communication skills.

A4 Group project 1

Due: **Week 9**
Weighting: **12%**

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

- Weekly individual submissions
- Weekly attendance and participation
- Final group presentation
- Peer evaluation and
- Final project mark.

Details of this assessment will be posted on iLearn.

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 Failure analysis report

Due: **Week 10**
Weighting: **13%**

A 4-page failure analysis research report. The topic of failure analysis will be posted on iLearn.

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 effective written and oral communication skills.

A6 Group Project 2

Due: **Week 13**
Weighting: **18%**

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

- Weekly individual submissions
- Weekly attendance and participation
- Final group presentation
- Peer evaluation and
- Final project mark.

Details of this assessment will be posted on iLearn.

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.

A7 Final Examination

Due: **Exams period 14-30 Jun 2016**
Weighting: **40%**

The final examination is a hurdle assessment. Students must achieve a passing grade in this assessment task in addition to a passing overall grade in the unit. For more information on the policies of Hurdle assessment please refer to the Policy section of the unit guide. 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 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=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

Please refer to iLearn for the detailing of the schedule.

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

- A4 Group project 1
- A6 Group Project 2
- A7 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 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

- A2 Class Examination
- A3 Experimental Report
- A4 Group project 1
- A5 Failure analysis report
- A6 Group Project 2
- A7 Final Examination

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 Diagnostics Quiz
- A7 Final Examination

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 outcome

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

Assessment tasks

- A1 Diagnostics Quiz
- A3 Experimental Report
- A5 Failure analysis report
- A7 Final Examination

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 outcome

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

Assessment tasks

- A4 Group project 1
- A5 Failure analysis report
- A6 Group Project 2
- A7 Final Examination

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 outcome

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

Assessment tasks

- A3 Experimental Report
- A4 Group project 1
- A6 Group Project 2
- A7 Final Examination

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 outcome

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

Assessment tasks

- A2 Class Examination
- A3 Experimental Report
- A4 Group project 1

- A5 Failure analysis report
- A6 Group Project 2
- A7 Final Examination

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 task

- A7 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

- A5 Failure analysis report
- A7 Final Examination