ENEG11005 *Fundamentals of Professional Engineering*

Term 1 - 2020

Profile information current as at 07/05/2024 03:31 am

General Information

Overview

This unit prepares you to effectively transition into higher education by investigating study support services and developing good study practices. You will explore the fundamental skills and knowledge that characterise contemporary engineering practice: stakeholder engagement, problem-solving, sustainable development, systems engineering, ethical conduct, risk assessment, information literacy, Australian Standards, social innovation and technical communications. Your capacity to work productively in a small team and apply these fundamental aspects is developed and tested through undertaking a complex authentic engineering project. You will also learn to showcase your scholarly achievements by creating a student Portfolio. Successful completion of this unit will equip you with productive study habits; enlighten you with engineering practice insights; award you with practical communication skills in technical reporting, presentations and sketching; and prepare you for the following series of Project-Based Learning units and associated opportunities to interact with the engineering profession. Students enrolled in online mode must attend a compulsory residential school to facilitate peer collaboration and attainment of the unit learning outcomes.

Details

Career Level: *Undergraduate*
Unit Level: *Level 1*
Credit Points: *12*
Student Contribution Band: *8*
Fraction of Full-Time Student Load: *0.25*

Pre-requisites or Co-requisites

There are no requisites for this unit.
Important note: Students enrolled in a subsequent unit who failed their pre-requisite unit, should drop the subsequent unit before the census date or within 10 working days of Fail grade notification. Students who do not drop the unit in this timeframe cannot later drop the unit without academic and financial liability. See details in the Assessment Policy and Procedure (Higher Education Coursework).

Offerings For Term 1 - 2020

- Bundaberg
- Cairns
- Gladstone
- Mackay
- Mixed Mode
- Rockhampton

Attendance Requirements

All on-campus students are expected to attend scheduled classes – in some units, these classes are identified as a mandatory (pass/fail) component and attendance is compulsory. International students, on a student visa, must maintain a full time study load and meet both attendance and academic progress requirements in each study period (satisfactory attendance for International students is defined as maintaining at least an 80% attendance record).

Residential Schools

This unit has a Compulsory Residential School for distance mode students and the details are:
Click here to see your Residential School Timetable.

Website

This unit has a website, within the Moodle system, which is available two weeks before the start of term. It is important that you visit your Moodle site throughout the term. Please visit Moodle for more information.

Class and Assessment Overview

Recommended Student Time Commitment

Each 12-credit Undergraduate unit at CQUniversity requires an overall time commitment of an average of 25 hours of study per week, making a total of 300 hours for the unit.

Class Timetable

Regional Campuses
Bundaberg, Cairns, Emerald, Gladstone, Mackay, Rockhampton, Townsville

Metropolitan Campuses
Adelaide, Brisbane, Melbourne, Perth, Sydney

Assessment Overview

1. **Written Assessment**
Weighting: 15%
2. **Practical Assessment**
Weighting: 15%
3. **Written Assessment**
Weighting: 30%
4. **Portfolio**
Weighting: 40%

Assessment Grading

This is a graded unit: your overall grade will be calculated from the marks or grades for each assessment task, based on the relative weightings shown in the table above. You must obtain an overall mark for the unit of at least 50%, or an overall grade of 'pass' in order to pass the unit. If any 'pass/fail' tasks are shown in the table above they must also be completed successfully ('pass' grade). You must also meet any minimum mark requirements specified for a particular assessment task, as detailed in the 'assessment task' section (note that in some instances, the minimum mark for a task may be greater than 50%). Consult the University's Grades and Results Policy for more details of interim results and final grades.

CQUniversity Policies

All University policies are available on the CQUniversity Policy site.
You may wish to view these policies:

- Grades and Results Policy
- Assessment Policy and Procedure (Higher Education Coursework)
- Review of Grade Procedure
- Student Academic Integrity Policy and Procedure
- Monitoring Academic Progress (MAP) Policy and Procedure – Domestic Students
- Monitoring Academic Progress (MAP) Policy and Procedure – International Students
- Student Refund and Credit Balance Policy and Procedure
- Student Feedback – Compliments and Complaints Policy and Procedure
- Information and Communications Technology Acceptable Use Policy and Procedure

This list is not an exhaustive list of all University policies. The full list of University policies are available on the CQUniversity Policy site.

Previous Student Feedback

Feedback, Recommendations and Responses

Every unit is reviewed for enhancement each year. At the most recent review, the following staff and student feedback items were identified and recommendations were made.

Feedback from Students - have your say

Feedback
Access to academics was excellent and vital for completing the assignments.

Recommendation
Continue offering three workshops each week with dedicated tasks supported by local academics.

Feedback from Students - have your say

Feedback
The assignments were interesting and assisted with developing skills relevant to studying at university and working in engineering practice.

Recommendation
Maintain the same types of assignments.

Feedback from Students - have your say

Feedback
Weekly lectures were valuable and assisted to understand the assignments and associated tasks.

Recommendation
Weekly lectures should be maintained.

Feedback from Students - have your say

Feedback
Working in groups was challenging but an effective way to emulate engineering practice.

Recommendation
The group project to remain.

Feedback from Students - have your say

Feedback
The timing and scheduling of some curricular could be improved by having more time on team project and introducing sustainability and ethics earlier.

Recommendation
Investigate whether the schedule can be modified.

Feedback from Teaching team

Feedback
Most students did not make effective use of the new project activity forums.

Recommendation
Instructions for using activity forums and monitoring of students' posts should be improved.

Unit Learning Outcomes

On successful completion of this unit, you will be able to:

1. Reflect on the skills, knowledge and support services that promote effective study at university
2. Produce freehand sketches and 2D engineering drawings that follow Australian Standards
3. Develop and apply skills, knowledge and values that align with contemporary engineering practice
4. Demonstrate professional communication skills in oral and written domains
5. Formulate evidence-based opinions by locating, evaluating, and synthesising information from reputable sources
6. Work and learn individually and in small teams.

Learning outcomes are linked to Engineers Australia Stage 1 Competencies and also discipline capabilities.

Alignment of Learning Outcomes, Assessment and Graduate Attributes

— N/A Level | • Introductory Level | • Intermediate Level | • Graduate Level | ◦ Professional Level | ◦ Advanced Level

Alignment of Assessment Tasks to Learning Outcomes

Assessment Tasks	Learning Outcomes					
	1	2	3	4	5	6
1 - Written Assessment - 15%	•					
2 - Practical Assessment - 15%		•				
3 - Written Assessment - 30%			•	•	•	•
4 - Portfolio - 40%			•	•	•	•

Alignment of Graduate Attributes to Learning Outcomes

Graduate Attributes	Learning Outcomes					
	1	2	3	4	5	6
1 - Communication	•	•	•	•	•	•
2 - Problem Solving		•			•	•
3 - Critical Thinking		•			•	•
4 - Information Literacy	•	•		•	•	
5 - Team Work		•				•
6 - Information Technology Competence	•	•	•	•	•	
7 - Cross Cultural Competence		•				
8 - Ethical practice		•				
9 - Social Innovation						
10 - Aboriginal and Torres Strait Islander Cultures						

Alignment of Assessment Tasks to Graduate Attributes

Assessment Tasks	Graduate Attributes									
	1	2	3	4	5	6	7	8	9	10
1 - Written Assessment - 15%	•			•						

Assessment Tasks	Graduate Attributes									
	1	2	3	4	5	6	7	8	9	10
2 - Practical Assessment - 15%	•					•				
3 - Written Assessment - 30%	•	•	•	•		•	•	•		
4 - Portfolio - 40%	•	•	•	•	•	•	•	•		

Textbooks and Resources

Textbooks

ENEG11005

Prescribed

Engineering Your Future - An Australasian Guide
Edition: 4th (2016)
Authors: Dowling D, Hadgraft R, Carew A, McCarthy T, Hargreaves D, Baillie C & Male S
Wiley
Milton , Qld , Australia
ISBN: 978-0-7303-6916-5
Binding: Paperback

Additional Textbook Information
Copies can be purchased from the CQUni Bookshop here: http://bookshop.cqu.edu.au (search on the Unit code)

View textbooks at the CQUniversity Bookshop

IT Resources

You will need access to the following IT resources:

- CQUniversity Student Email
- Internet
- Unit Website (Moodle)
- Computer with Microsoft Office and EndNote installed

Referencing Style

All submissions for this unit must use the referencing style: Harvard (author-date)
For further information, see the Assessment Tasks.

Teaching Contacts

Benjamin Taylor Unit Coordinator
ben.taylor@cqu.edu.au

Schedule

Week 1 - Know the way forward - 09 Mar 2020

Module/Topic	Chapter	Events and Submissions/Topic
Lecture: Introduction to engineering practice	Chapter 1 – What is engineering (All Sections)	Commence Assignment 1 (Reflective Paper) and Assignment 4 (Portfolio)

Week 2 - Managing your learning journey - 16 Mar 2020

Module/Topic	Chapter	Events and Submissions/Topic
Lecture: Management of learning, time and team	Chapter 5 – Self management (Sections 5.4 & 5.5) & Chapter 6 – Working with people (Section 6.2)	

Week 3 - Information literacy in engineering - 23 Mar 2020

Module/Topic	Chapter	Events and Submissions/Topic
Lecture: Information literacy and Australian Standards	Chapter 9 - Understanding the problem (All Sections)	

Week 4 - Sketching and visualising - 30 Mar 2020

Module/Topic	Chapter	Events and Submissions/Topic
COMPULSORY RESIDENTIAL SCHOOL FOR MIX-MODE STUDENTS Lecture: Sketching and visualisation for engineers	**COMPULSORY RESIDENTIAL SCHOOL FOR MIX-MODE STUDENTS** Resources listed on Moodle	**COMPULSORY RESIDENTIAL SCHOOL FOR MIX-MODE STUDENTS** Commence Assignment 2 (Sketching and Visualisation for Engineers) **Individual Reflective Paper on Studying at University** Due: Week 4 Tuesday (31 Mar 2020) 10:00 pm AEST

Week 5 - Starting your engineering project - 06 Apr 2020

Module/Topic	Chapter	Events and Submissions/Topic
Lecture: Team project introduction and advice	Chapter 6 – Working with people (Sections 6.3, 6.4 & 6.5)	Commence Assignment 3 (Team Project Report and Presentation)

Vacation Week - 13 Apr 2020

Module/Topic	Chapter	Events and Submissions/Topic
		Sketching and Visualisation for Engineers Due: Vacation Week Tuesday (14 Apr 2020) 10:00 pm AEST

Week 6 - The engineering method - 20 Apr 2020

Module/Topic	Chapter	Events and Submissions/Topic
Lecture: Problem-solving and engineering stakeholders	Chapter 2 - The engineering method (Sections 2.1 & 2.2) & Chapter 12 - Engineering decision making (Sections 12.3 & 12.4)	

Week 7 - Our engineering values - 27 Apr 2020

Module/Topic	Chapter	Events and Submissions/Topic
Lecture: Sustainability, ethics and social innovation	Chapter 3 - Sustainable engineering (All sections) & Chapter 4 - Professional responsibility and ethics (All sections)	Guest lecture: Engineers Australia

Week 8 - Managing risks - 04 May 2020

Module/Topic	Chapter	Events and Submissions/Topic
Lecture: Risk assessment and ENEG11005 review	Chapter 13 - Managing engineering projects (Section 13.3)	

Week 9 - Effective communication - 11 May 2020

Module/Topic	Chapter	Events and Submissions/Topic
Lecture: Communicating effectively with reports and presentations	Chapter 7 - Understanding communication (All sections) & Chapter 8 - Communication skills (All sections)	

Week 10 - Progress review - 18 May 2020

Module/Topic	Chapter	Events and Submissions/Topic
Lecture: Portfolio walkthrough	Chapter 14 Communicating information (Sections 14.1, 14.2 & 14.3)	

Week 11 - The presentation - 25 May 2020

Module/Topic	Chapter	Events and Submissions/Topic
Guest Lecture (TBA)	Chapter 14 Communicating information (Sections 14.4 & 14.5)	**Team Technical Project Report** Due: Week 11 Tuesday (26 May 2020) 10:00 pm AEST

Week 12 - Unit reflection - 01 Jun 2020

Module/Topic	Chapter	Events and Submissions/Topic
Lecture: Student project presentations	Chapter 5 - Self-management (Section 5.6) & Chapter 15 - Your engineering career (All sections)	Student teams are invited to present their project outcomes using the lecture slot but limited presentations can be scheduled.

Review/Exam Week - 08 Jun 2020

Module/Topic	Chapter	Events and Submissions/Topic
		Individual Learning Portfolio Due: Review/Exam Week Tuesday (9 June 2020) 10:00 pm AEST

Exam Week - 15 Jun 2020

Module/Topic	Chapter	Events and Submissions/Topic

Assessment Tasks

1 Individual Reflective Paper on Studying at University

Assessment Type
Written Assessment

Task Description
Individually prepare a Reflective Paper by studying the topics and resources provided for this assignment on Moodle. You will need to become familiar with the Reflective Writing Guide to ensure your paper articulates reflective thoughts rather than just restating information from the resources provided. There is no strict word limit, either minimum or maximum, but you should be able to prepare approximately one page for each topic. Prepare your paper by writing succinctly.

Assessment Due Date
Week 4 Tuesday (31 Mar 2020) 10:00 pm AEST

Return Date to Students
Week 6 Tuesday (21 Apr 2020)

Weighting
15%

Minimum mark or grade
25%

Assessment Criteria
Moodle contains a marking rubric that includes indicators of attainment at the ‘Sound’, ‘Good’ and ‘Excellent’ levels for each assignment topic.

Referencing Style

- Harvard (author-date)

Submission
Online

Submission Instructions
Prepare your paper following the instructions provided on Moodle. Upload a single PDF.

Learning Outcomes Assessed

- Reflect on the skills, knowledge and support services that promote effective study at university

Graduate Attributes

- Communication
- Information Literacy

2 Sketching and Visualisation for Engineers

Assessment Type
Practical Assessment

Task Description
Moodle includes set activities for sketching and visualisation that will build confidence and skills to express engineering thoughts and designs visually. Sketching activities develop free-hand pencil drawing techniques. Visualisation activities involve developing isometric views and orthographic projections of solid objects which follows specifications in AS1100 – Australian Standards for Technical Drawing. This standard is accessible through the CQU library website. You will also interpret information from an engineering drawing.

Assessment Due Date
Vacation Week Tuesday (14 Apr 2020) 10:00 pm AEST

Return Date to Students
Week 7 Tuesday (28 Apr 2020)

Weighting
15%

Minimum mark or grade
25%

Assessment Criteria
Moodle contains a marking rubric that states the expectations for each activity. Sketches and drawings should be neat, with one activity per page and of a reasonable scale. The correct line types and shading should be used. Marks will be deducted if sketches and drawings do not meet these criteria.

Referencing Style

- Harvard (author-date)

Submission
Online

Submission Instructions
Upload a single PDF that combines your solutions to all activities.

Learning Outcomes Assessed

- Produce freehand sketches and 2D engineering drawings that follow Australian Standards

Graduate Attributes

- Communication
- Information Technology Competence

3 Team Technical Project Report

Assessment Type
Written Assessment

Task Description
In your project team, prepare a Technical Report using the Microsoft Word Report Template provided on Moodle. Resources for this assignment are provided on Moodle, in lectures and workshops. You will need to seek feedback from your lecturer at the draft stage of your report. There is no strict word limit, either minimum or maximum. Your team should aim to prepare a report which adequately explains the decision-making processes, designs and results of your project. Write succinctly and avoid padding your report with discussions that are unnecessary.

Assessment Due Date
Week 11 Tuesday (26 May 2020) 10:00 pm AEST

Return Date to Students
Review/Exam Week Tuesday (9 June 2020)

Weighting
30%

Minimum mark or grade
25%

Assessment Criteria
A Marking Rubric is provided on Moodle that includes indicators of attainment at the ‘Sound’, ‘Good’ and ‘Excellent’ levels for each element of the report.

Referencing Style

- Harvard (author-date)

Submission
Online Group

Submission Instructions
Only one team member submits on behalf of the team. They must upload a single PDF of the entire report

Learning Outcomes Assessed

- Develop and apply skills, knowledge and values that align with contemporary engineering practice
- Demonstrate professional communication skills in oral and written domains
- Formulate evidence-based opinions by locating, evaluating, and synthesising information from reputable sources
- Work and learn individually and in small teams.

Graduate Attributes

- Communication
- Problem Solving
- Critical Thinking
- Information Literacy
- Information Technology Competence
- Cross Cultural Competence
- Ethical practice

4 Individual Learning Portfolio

Assessment Type
Portfolio

Task Description
Individually prepare an electronic portfolio as evidence of your achievements towards the unit learning outcomes while simultaneously working on your team project and report. The Portfolio must be prepared using the Microsoft Word template provided on Moodle, and it must contain only your work. The Portfolio must contain the following compulsory sections.
Grade Nomination: A self-assessment of your level of achievement (‘Sound’, ‘Good’ or ‘Excellent’) that you believe should be awarded for each task listed in the Portfolio marking rubric on Moodle. For each task, you will need to substantiate your claim by including the active document links and page numbers to entries in your portfolio that contain evidence of meeting the associated indicators of attainment from the marking rubric. Evidence of your learning achievements will come from subsequent sections of your Portfolio including entries in your Workbook, and Reflective Journal. An example of a Grade Nomination is provided on Moodle.
Workbook: Can be typed, handwritten (then scanned) or a combination of both but must be neat, chronological and legible. The workbook contains all your work for the team project and the weekly challenge activities. It should contain separate entries with headings and the date, such as: ‘April 20 – Project Risk Assessment’. These entries will show when you worked on each element of the project and how your ideas and capabilities have developed through the unit. You should not go back and edit old entries as this may prohibit demonstrating skills development. The workbook will principally contain the weekly challenge activities and your posts to Moodle forums that will help your team to collaborate on your project tasks. You cannot complete these tasks retrospectively so you must be prepared to add entries to your workbook each week during the term. Entries should demonstrate a variety of technical skills like researching, brainstorming, creating mind maps, flowcharts, methodologies, schedules, obtaining experimental data, undertaking data analysis, producing results, figures, charts, conclusions, or any other work done for your team project and the challenge activities. It is good practice to add entries to your Workbook first and then post a copy to the relevant team forum to ensure you retain the original work.
Reflective Journal: As with your workbook, it can be typed, handwritten (then scanned) or a combination of both but must be neat, chronological and legible. The Reflective Journal contains your thoughts about how you and your team are progressing throughout the term and what you have learnt and experienced either directly by doing the work or indirectly through observing others. Again, like the Workbook, It should contain entries each week. Entries must have

headings with the date and a title, such as: ‘April 20 – Why I think Risk Assessment is important for engineers’. Reflective entries can demonstrate a variety of achievements like understanding how and when you learnt something, identifying effective ways to communicate and work with your peers, and comprehending the relevance of what you have learnt and experienced towards your future engineering career. You should not go back and edit old entries as this may prohibit demonstrating your development. Thus, the Reflective Journal cannot be completed retrospectively. Refer to the Reflective Writing Guide on Moodle.
You should expect that your lecturer will ask to see your Workbook and Reflective Journal at any time during the term to ensure that you are progressing suitably towards achieving the associated unit learning outcomes.

Assessment Due Date
Review/Exam Week Tuesday (9 June 2020) 10:00 pm AEST

Return Date to Students

Feedback will be provided before finalisation of grades

Weighting
40%

Minimum mark or grade
50%

Assessment Criteria
A Marking Rubric is provided on Moodle that includes indicators of attainment at the ‘Sound’, ‘Good’ and ‘Excellent’ levels for all Portfolio tasks.

Referencing Style

- Harvard (author-date)

Submission
Online

Submission Instructions
Upload a single PDF which includes active bookmarks in the Grade Nomination to all pages containing evidence of meeting the marking criteria.

Learning Outcomes Assessed

- Develop and apply skills, knowledge and values that align with contemporary engineering practice
- Demonstrate professional communication skills in oral and written domains
- Formulate evidence-based opinions by locating, evaluating, and synthesising information from reputable sources
- Work and learn individually and in small teams.

Graduate Attributes

- Communication
- Problem Solving
- Critical Thinking
- Information Literacy
- Team Work
- Information Technology Competence
- Cross Cultural Competence
- Ethical practice

Academic Integrity Statement

As a CQUniversity student you are expected to act honestly in all aspects of your academic work.

Any assessable work undertaken or submitted for review or assessment must be your own work. Assessable work is any type of work you do to meet the assessment requirements in the unit, including draft work submitted for review and feedback and final work to be assessed.

When you use the ideas, words or data of others in your assessment, you must thoroughly and clearly acknowledge the source of this information by using the correct referencing style for your unit. Using others' work without proper acknowledgement may be considered a form of intellectual dishonesty.

Participating honestly, respectfully, responsibly, and fairly in your university study ensures the CQUniversity qualification you earn will be valued as a true indication of your individual academic achievement and will continue to receive the respect and recognition it deserves.

As a student, you are responsible for reading and following CQUniversity's policies, including the **Student Academic Integrity Policy and Procedure**. This policy sets out CQUniversity's expectations of you to act with integrity, examples of academic integrity breaches to avoid, the processes used to address alleged breaches of academic integrity, and potential penalties.

What is a breach of academic integrity?
A breach of academic integrity includes but is not limited to plagiarism, self-plagiarism, collusion, cheating, contract cheating, and academic misconduct. The Student Academic Integrity Policy and Procedure defines what these terms mean and gives examples.

Why is academic integrity important?
A breach of academic integrity may result in one or more penalties, including suspension or even expulsion from the University. It can also have negative implications for student visas and future enrolment at CQUniversity or elsewhere. Students who engage in contract cheating also risk being blackmailed by contract cheating services.

Where can I get assistance?
For academic advice and guidance, the Academic Learning Centre (ALC) can support you in becoming confident in completing assessments with integrity and of high standard.

What can you do to act with integrity?

Be Honest
If your assessment task is done by someone else, it would be dishonest of you to claim it as your own

Seek Help
If you are not sure about how to cite or reference in essays, reports etc, then seek help from your lecturer, the library or the Academic Learning Centre (ALC)

Produce Original Work
Originality comes from your ability to read widely, think critically, and apply your gained knowledge to address a question or problem