



# ENEG11007 Engineering Industry Project Investigation

## Term 2 - 2019

Profile information current as at 09/05/2024 09:46 am

All details in this unit profile for ENEG11007 have been officially approved by CQUUniversity and represent a learning partnership between the University and you (our student). The information will not be changed unless absolutely necessary and any change will be clearly indicated by an approved correction included in the profile.

## General Information

### Overview

In this unit, you will apply, expand and reflect on your knowledge of professional engineering practice through investigating a real-world engineering project. You will work in a small team guided by a professional engineer to develop your project outcomes. You will learn to research a scope of investigation when presented with a complex and ill-defined situation; to apply the engineering method of problem solving to investigate several viable solutions and; to enhance project outcomes by applying concepts of sustainability and evidence-based decision making. You will also demonstrate application of technical knowledge in at least one engineering discipline relevant to your choice of industry project; develop effective time, team and project management skills; and demonstrate professional communication skills by creating a team technical report and presentation. Throughout the unit you will be compiling an Individual Portfolio to showcase your sustained contributions to the project and to demonstrate a professional attitude for working individually and in your team.

### Details

Career Level: *Undergraduate*

Unit Level: *Level 1*

Credit Points: 6

Student Contribution Band: 8

Fraction of Full-Time Student Load: 0.125

### Pre-requisites or Co-requisites

Prerequisite: ENEG11005 Fundamentals of Professional Engineering OR ENEG11001 Engineering Skills 1

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 2 - 2019

- Bundaberg
- Cairns
- Gladstone
- Mackay
- Online
- 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).

### 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 6-credit Undergraduate unit at CQUniversity requires an overall time commitment of an average of 12.5 hours of study per week, making a total of 150 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. **Portfolio**

Weighting: 100%

### 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

##### **Feedback**

Students appreciate the freedom to choose their project and the opportunity to complete a real-world project with a practising engineer to guide them.

##### **Recommendation**

Maintain a good variety of authentic projects for students to choose from.

#### Feedback from Students

##### **Feedback**

Links to lectures were not promptly created on Moodle.

##### **Recommendation**

Students appreciate quick links to learning resources but the creation of these links must be consistent.

#### Feedback from Students

##### **Feedback**

Students would prefer less than 100% formative assessment for the portfolio and for the team report to be assessed.

##### **Recommendation**

The summative assessment weighting of the Portfolio could be reduced to provide greater incentive to complete the Scope Document, Progress Report, Draft Report and Final Team Report but reductions should be limited to ensure grades are predominately based on individual work.

## Unit Learning Outcomes

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

1. Research a complex and ill-defined real-world engineering project to establish the requirements and a well-defined scope
2. Apply the engineering method of problem solving to investigate several viable solutions
3. Analyse and assess an engineering project using a sustainability framework
4. Demonstrate technical knowledge in at least one engineering discipline area
5. Articulate and demonstrate effective time, team and project management skills
6. Provide evidence of a professional capacity to communicate, work and learn individually and in a team

Learning Outcomes are linked to Engineers Australia Stage 1 Competencies and also discipline capabilities. You can find the mapping for this on the Engineering Undergraduate Course website.

## Alignment of Learning Outcomes, Assessment and Graduate Attributes



## Alignment of Assessment Tasks to Learning Outcomes

Assessment Tasks	Learning Outcomes					
	1	2	3	4	5	6
1 - Portfolio - 100%	●	●	●	●	●	●

## 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

[illegible]

## Textbooks and Resources

### Textbooks

ENEG11007

#### Prescribed

#### Engineering Your Future

Edition: Third Edition (2016)

Authors: David Dowling, Roger Hadgraft, Anna Carew, Tim McCarthy, Doug Hargreaves, Caroline Baillie  
Wiley

Singapore, Singapore, Singapore

ISBN: 9780730314721

Binding: Paperback

[View textbooks at the CQUniversity Bookshop](#)

### IT Resources

**You will need access to the following IT resources:**

- CQUniversity Student Email
- Internet
- Unit Website (Moodle)
- AutoCad, Microsoft Project

## 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](mailto:ben.taylor@cqu.edu.au)

## Schedule

### Week 1 - 15 Jul 2019

Module/Topic	Chapter	Events and Submissions/Topic
Unit Introduction, Team Formation and Project Selection. Project Management - who is important	Unit Overview and Project Topics Released	<b>Individual:</b> Select Project and Team

### Week 2 - 22 Jul 2019

Module/Topic	Chapter	Events and Submissions/Topic
Research Project, Client and Preliminary Scope Project Management - what is important.	Team Charter and Client Interactions	<b>Team:</b> Hold Initial Project Meeting With Industry Partner

### Week 3 - 29 Jul 2019

Module/Topic	Chapter	Events and Submissions/Topic
Client Project Meeting, Preparation and Execution	Project Scoping, Scheduling and Risks	<b>Team:</b> Hold Initial Project Meeting With Industry Partner

**Week 4 - 05 Aug 2019**

Module/Topic	Chapter	Events and Submissions/Topic
Project Scope and Schedule	Research Methods	<b>Team:</b> Project Scope and Schedule Due Friday (09 Aug. 2019) 10:00 pm AEST <b>Individual:</b> Learning Approach Questionnaire 1 Due Friday (09 Aug. 2019) 10:00 pm AEST

**Week 5 - 12 Aug 2019**

Module/Topic	Chapter	Events and Submissions/Topic
Commencing Project Work: Sustainably Applying the Engineering Method	Sustainability and The Engineering Method	

**Vacation Week - 19 Aug 2019**

Module/Topic	Chapter	Events and Submissions/Topic
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**Week 6 - 26 Aug 2019**

Module/Topic	Chapter	Events and Submissions/Topic
Project Progress Report	Preparing Progress Reports	<b>Team:</b> Project Progress Report Due Friday (30 Aug. 2019) 10:00 pm AEST

**Week 7 - 02 Sep 2019**

Module/Topic	Chapter	Events and Submissions/Topic
Continue Project Work	Portfolio Progress Check and Advice	

**Week 8 - 09 Sep 2019**

Module/Topic	Chapter	Events and Submissions/Topic
Draft Project Report	Reporting Preliminary Results	<b>Team:</b> Project Draft Report Due Friday (13 Sep. 2019) 10:00 pm AEST <b>Individual:</b> Learning Approach Questionnaire 2 Due Friday (13 Sep. 2019) 10:00 pm AEST

**Week 9 - 16 Sep 2019**

Module/Topic	Chapter	Events and Submissions/Topic
Continue Project Work	Unit Reflection and Final Project Advice	

**Week 10 - 23 Sep 2019**

Module/Topic	Chapter	Events and Submissions/Topic
Compile Project Report	Preparing Reports and Presentations	<b>Team:</b> Project Final Report Due Friday (27 Sep. 2019) 10:00 pm AEST

**Week 11 - 30 Sep 2019**

Module/Topic	Chapter	Events and Submissions/Topic
Project Presentations and Client Feedback	Proposed Guest Lecture (could be rescheduled to accommodate speaker availability)	<b>Team:</b> Project Presentations date to be announced <b>Individual:</b> Self- & Peer-Assessment Questionnaire Due Friday (4 Oct. 2019) 10:00 pm AEST

**Week 12 - 07 Oct 2019**

Module/Topic	Chapter	Events and Submissions/Topic
Portfolio Submission	Student Project Presentations (Presenters announced in Week 11)	

**Review/Exam Week - 14 Oct 2019**

Module/Topic	Chapter	Events and Submissions/Topic
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**Individual:** Viva Voce (if necessary)

**Individual Portfolio of Learning Achievements** Due: Review/Exam Week Monday (14 Oct 2019) 10:00 pm AEST

**Exam Week - 21 Oct 2019**

**Module/Topic**

**Chapter**

**Events and Submissions/Topic**

**Individual:** Viva Voce (if necessary)

## Assessment Tasks

### 1 Individual Portfolio of Learning Achievements

#### Assessment Type

Portfolio

#### Task Description

Prepare an electronic Portfolio of your work as evidence of achieving the relevant unit learning outcomes while completing your team project. You must use the provided Portfolio Template, and your Portfolio shall only contain your work. Your Portfolio must include the following compulsory sections in the order listed. Additional instructions for preparing your Portfolio are provided on Moodle.

**Grade Nomination:** A self-assessment of your level of learning achievement ('Sound', 'Good' or 'Excellent') against each criterion listed in the Portfolio Marking Rubric on Moodle. You need to substantiate all claims by including working electronic bookmarks (document hyperlinks) to the specific entries in your Portfolio that contain clear evidence of meeting the marking rubric criteria. The proof will come from entries in the sections of your Portfolio described below (Workbook, Reflective Journal, and Self and Peer-Assessment Results). Incomplete Grade Nominations or inactive bookmarks will lead to an 'unacceptable' grade for the relevant criteria of the marking rubric. Moodle will contain an example of a suitable Grade Nomination.

**Workbook:** Can be typed, handwritten then scanned or a combination of both but must be neat, chronological and legible. It should contain all your work for the team project in 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 cannot be completed retrospectively and should include at least two entries each week while working on the team project, but can easily contain many more entries each week. Entries should demonstrate a variety of technical skills like researching, brainstorming, creating mind maps, flowcharts, explaining methodologies, creating schedules, obtaining and analysing experimental data, producing and discussing results, figures, charts, conclusions, or any other work for your team project. It is good practice to add entries to your Workbook first and then share a copy with your teammates to ensure you retain all your original work.

**Reflective Journal:** As with your workbook, you may type, handwrite then scan or use a combination of both but it must be neat, chronological and legible. The Reflective Journal contains your thoughts about how you and your team are progressing with the project and what you have learnt and experienced either directly by doing the work yourself or indirectly through observing others. Again, like the Workbook, at least two entries should be made each week while working on the project but you could prepare many more reflections each week. Entries must have headings with the date and a title, such as: 'April 20 - Why I think Risk Assessment is critical for engineers'. Entries should focus on a single thought or reflective topic and conclude with a plan to apply what you have learnt. 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 your learnings to your future engineering career. You should not go back and edit old entries as this may prohibit demonstrating skill development. You cannot complete the Reflective Journal retrospectively. Refer to the Reflective Writing Guide on Moodle for an example entry.

**You can expect that your lecturer will ask to see your Workbook and Reflective Journal at any time during the team project to ensure you are progressing suitably towards achieving the associated unit learning outcomes. You should also be aware that to complete this assignment successfully you must commence your Portfolio several weeks before the due date, ideally, as soon as you start the project.**

**Self- and Peer-Assessment:** You are required to complete an anonymous Self- and Peer Assessment (SPA) questionnaire towards the end of your team project. SPAs provide de-identified formative feedback to you and your teammates about aspects of teamwork that are perceived by peers to be 'working well', 'satisfactory' or 'could be improved'. If you disagree with SPA feedback, then your thoughts should be articulated through an entry in your Reflective Journal and sent to your lecturer for consideration. Guidelines for completing SPAs are on Moodle. SPAs are

accessible through Moodle.

**Viva Voce:** You may be contacted during the exam weeks by your lecturer to answer questions that clarify unclear learning claims or evidence in your Portfolio. Notify your lecturer when submitting your Portfolio if you will be unavailable during this period.

**Assessment Due Date**

Review/Exam Week Monday (14 Oct 2019) 10:00 pm AEST

**Return Date to Students**

**Weighting**

100%

**Minimum mark or grade**

50%

**Assessment Criteria**

A Marking Rubric on Moodle includes criteria for demonstrating learning achievements at the 'Sound', 'Good' and 'Excellent' levels for all Portfolio tasks.

**Referencing Style**

- [Harvard \(author-date\)](#)

**Submission**

Online

**Submission Instructions**

Upload a single PDF document with active links to all learning evidence in the Grade Nomination.

**Learning Outcomes Assessed**

- Research a complex and ill-defined real-world engineering project to establish the requirements and a well-defined scope
- Apply the engineering method of problem solving to investigate several viable solutions
- Analyse and assess an engineering project using a sustainability framework
- Demonstrate technical knowledge in at least one engineering discipline area
- Articulate and demonstrate effective time, team and project management skills
- Provide evidence of a professional capacity to communicate, work and learn individually and in a team

**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