ENEG28001 *Australian Engineering Practice*
Term 1 - 2024

All details in this unit profile for ENEG28001 have been officially approved by CQUniversity 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 further develop your professional engineering skills necessary to practice as a graduate engineer in Australia. You will learn Engineers Australia's prescribed competency standards, codes of practice and ethics, the roles and responsibilities of a professional engineer. You will apply your knowledge to conceive, develop and deliver sustainable solutions to complex engineering problems, autonomously and as part of a team. You will use advanced search methods to retrieve and critically assess scientific and technical information and apply it to synthesise the conduct and management of engineering projects. You will develop your communication skills, including technical writing and presentations based on effective research, paraphrasing, referencing, and reviewing published information. As a small team, you will prepare a scope for an investigation to demonstrate an understanding of the tasks involved in an Australian engineering feasibility investigation. You will enhance your awareness of ways to contribute to the United Nations Sustainable Development Goals. You will apply your engineering knowledge and skills to enhance welfare, health, and safety, with the minimal use of natural resources and paying attention to the environment and the sustainability of the resources.

Details

Career Level: *Postgraduate*
Unit Level: *Level 8*
Credit Points: *6*
Student Contribution Band: *2*
Fraction of Full-Time Student Load: *0.125*

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 - 2024

- Melbourne
- 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 Postgraduate 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. **Self assessment**
Weighting: 20%
2. **Written Assessment**
Weighting: 30%
3. **Group Work**
Weighting: 30%
4. **Presentation**
Weighting: 20%

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.

Unit Learning Outcomes

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

1. Reflect on the roles, responsibilities and attributes of a professional engineer
2. Develop sustainable solutions to complex engineering problems from socio-technical and environmental perspectives
3. Retrieve and manage technical information and critically assess its accuracy, reliability and authenticity
4. Apply systematic approaches to the conduct and management of engineering projects autonomously and as part of multidisciplinary and multicultural teams
5. Develop high quality engineering reports using different communication media and share them verbally and in written form
6. Demonstrate ethical practice, accountability, and a commitment to lifelong learning, with specific reference to the Engineers Australia Code of Ethics.

Learning Outcomes for this unit are linked with the Engineers Australia Stage 1 Competency Standards for Professional Engineers in the areas of 1. Knowledge and Skills Base, 2. Engineering Application Ability and 3. Professional and Personal Attributes at the following levels:

Intermediate

1.4 Discernment of knowledge development and research directions within the engineering discipline. (LO: 2I)

1.5 Knowledge of engineering design practice and contextual factors impacting the engineering discipline. (LO: 2I)

1.6 Understanding of the scope, principles, norms, accountabilities and bounds of sustainable engineering practice in the specific discipline. (LO: 1I 6I)

2.1 Application of established engineering methods to complex engineering problem solving. (LO: 2I 3I)

2.2 Fluent application of engineering techniques, tools and resources. (LO: 3I 4I)

2.4 Application of systematic approaches to the conduct and management of engineering projects. (LO: 2I 4I)

3.1 Ethical conduct and professional accountability. (LO: 1I 6I)

3.2 Effective oral and written communication in professional and lay domains. (LO: 5I)

3.3 Creative, innovative and proactive demeanour. (LO: 2I)

3.4 Professional use and management of information. (LO: 3I 5I)

3.5 Orderly management of self and professional conduct. (LO: 6I)

3.6 Effective team membership and team leadership. (LO: 4I)

Advanced

1.3 In-depth understanding of specialist bodies of knowledge within the engineering discipline. (LO: 2A 4I)

Note: LO refers to the Learning Outcome number(s) that link to the competency and the levels: N – Introductory, I – Intermediate and A – Advanced.

Refer to the Engineering Postgraduate Units Moodle site for further information on the Engineers Australia's Stage 1 Competency Standard for Professional Engineers and course level mapping information https://moodle.cqu.edu.au/course/view.php?id=11382

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 - Self assessment - 20%	●					
2 - Written Assessment - 30%			●		●	●
3 - Group Work - 30%		●		●		●
4 - Presentation - 20%			●		●	

Alignment of Graduate Attributes to Learning Outcomes

Graduate Attributes	Learning Outcomes					
	1	2	3	4	5	6
1 - Knowledge		○	○			
2 - Communication			○		○	
3 - Cognitive, technical and creative skills		○		○		
4 - Research			○			
5 - Self-management	○					
6 - Ethical and Professional Responsibility						○
7 - Leadership				○		
8 - Aboriginal and Torres Strait Islander Cultures						

Textbooks and Resources

Textbooks

There are no required textbooks.

IT Resources

You will need access to the following IT resources:

- CQUniversity Student Email
- Internet
- Unit Website (Moodle)

Referencing Style

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

Teaching Contacts

Md Nurun Nabi Unit Coordinator
m.nabi@cqu.edu.au

Schedule

Week 1 - 04 Mar 2024

Module/Topic	Chapter	Events and Submissions/Topic
Fundamentals of Engineering Practice. Competencies, Skills, Qualities and Attributes.	Lecture notes.	Workshop – • Unit structure and assessment details. • Skills and SWOT Audit. • Introduction to Engineers Australia Stage 1 Competencies.

Week 2 - 11 Mar 2024

Module/Topic	Chapter	Events and Submissions/Topic
Engineer's Code of Ethics.	Lecture notes.	Workshop – • Academic Integrity and Ethical Conduct. • Case studies on academic integrity.

Week 3 - 18 Mar 2024

Module/Topic	Chapter	Events and Submissions/Topic
Information literacy - retrieval, analysis, storage, and sharing.	• Lecture notes. • CQU library resource. • Additional resources will be available in MOODLE.	Workshop – • Australian standard. • Literature surveys. • Databases. • Search engines.

Week 4 - 25 Mar 2024

Module/Topic	Chapter	Events and Submissions/Topic

Introduction to reference management software (EndNote), its importance, the formation of a reference library, and its application in technical reports, research papers, and theses.	• Lecture notes. • CQU library resource. • Additional resources will be available in MOODLE.	Workshop – • Harvard referencing. • Understanding Turnitin and how to avoid academic integrity issues (i.e., plagiarism or using Chat GPT responsibly).

Week 5 - 01 Apr 2024

Module/Topic	Chapter	Events and Submissions/Topic
Technical skills.	Lecture notes.	• Workshop – • Note-taking, paraphrasing, and understanding academic journal articles. • Formation of project teams. **SELF - ASSESSMENT (Professional Competencies Portfolio)** Due: Week 5 Thursday (4 Apr 2024) 5:00 pm AEST

Vacation Week - 08 Apr 2024

Module/Topic	Chapter	Events and Submissions/Topic
No classes and workshops are scheduled during vacation week.		

Week 6 - 15 Apr 2024

Module/Topic	Chapter	Events and Submissions/Topic
Engineering communication, teams, and collaboration.	Lecture notes.	Workshop – • Introduction to HOMER Software. • Project scheduling (Gantt chart). • Use of MS Excel in engineering.

Week 7 - 22 Apr 2024

Module/Topic	Chapter	Events and Submissions/Topic
Workplace health and safety, risk analysis, and risk management.	• Lecture notes. • Additional resources will be available in MOODLE.	Workshop – Practice the team project's risk assessment.

Week 8 - 29 Apr 2024

Module/Topic	Chapter	Events and Submissions/Topic
Engineering problem-solving and stakeholder engagement.	Lecture notes.	Workshop – Exercise engineering problem-solving and stakeholder engagement. **Written Assessment (Information Retrieval and Processing)** Due: Week 8 Thursday (2 May 2024) 5:00 pm AEST

Week 9 - 06 May 2024

Module/Topic	Chapter	Events and Submissions/Topic
Self-management, professional responsibility, and sustainability.	Lecture notes.	Workshop – • Key project deliverables. • Discussion on team project progress.

Week 10 - 13 May 2024

Module/Topic	Chapter	Events and Submissions/Topic
Engineering project management.	Lecture notes.	Workshop – • Introduction to professional presentation. • Mock presentation on the student's team project.

Week 11 - 20 May 2024

Module/Topic	Chapter	Events and Submissions/Topic
Work-Integrated Learning (WIL) and Continuing Professional Development (CPD).	Lecture notes.	Workshops – Exercises on WIL and CPD. **Presentation (Team Project Presentation)** Due: Week 11 Friday (24 May 2024) 5:00 pm AEST

Week 12 - 27 May 2024

Module/Topic	Chapter	Events and Submissions/Topic
Reflective writing and review of the term.	Lecture notes.	The team project presentation is due this week. **Group Work (Team project)** Due: Week 12 Thursday (30 May 2024) 5:00 pm AEST

Review/Exam Week - 03 Jun 2024

Module/Topic	Chapter	Events and Submissions/Topic

Exam Week - 10 Jun 2024

Module/Topic	Chapter	Events and Submissions/Topic

Term Specific Information

N/A.

Assessment Tasks

1 SELF - ASSESSMENT (Professional Competencies Portfolio)

Assessment Type
Self assessment

Task Description
This is an individual submission item. This task consists of two parts. In Part A, you will carry out a strengths, weaknesses, opportunities, and threats (SWOT) analysis of yourself and discuss your journey as an engineering graduate. You will list your career goals, the reason you have joined this course, and what discipline you wish to specialise in and why.
In Part B, summarise the Code of Ethics and state how you think they are important to the practice of engineering not just in Australia but across the globe.

Assessment Due Date
Week 5 Thursday (4 Apr 2024) 5:00 pm AEST
As per the CQU policy, 5% marks will be deducted for each day of delayed submission without prior approval.

Return Date to Students
Week 7 Thursday (25 Apr 2024)
It is expected that the assessment item will be returned in 2 weeks after the due date.

Weighting
20%

Minimum mark or grade
50%

Assessment Criteria
For part A

1. Visit the Engineers Australia website and download the Stage 1 Competency Standard for Professional Engineers document. Read this document thoroughly.
2. Conduct a SWOT analysis of yourself.

3. Map your skills and competencies with Engineers Australia's descriptors.
4. Discuss your journey as an engineering graduate and list your career goals, the reason you have joined this course, and what subdiscipline you wish to specialise in and why.
5. Reflect on your current standing as an engineering graduate and what areas you have to improve to achieve your professional targets.
6. Limit your writing to 1600 words, +/- 10%.
7. Accurately reference the work of third parties, words, figures, tables, etc., in accordance with CQU's Harvard referencing guide.

For part B

1. Download the Engineers Australia Code of Ethics document and read it thoroughly.
2. Based on the Engineers Australia Code of Ethics indicated above, state how you think they are important to the practice of engineering, not just in Australia but across the globe (200 words, +/-10%).
3. Choose any one of the four codes of ethics and write an essay (1000 words, +/-10%) on your opinion of the code you have selected by citing a personal example in your career of how you have upheld that code of ethics.
4. Accurately reference the work of third parties, words, figures, tables, etc., in accordance with CQU's Harvard referencing guide.

Assignments must be submitted electronically (in "word" format, **not pdf**) in Moodle. The file name should be in the format "Your first name_unit code_assessment number.docx". An example of a file format is "Nurun_ENEG28001_A1.docx"
Details are illustrated in the marking rubrics/criteria available in MOODLE.

Referencing Style

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

Submission
Online

Submission Instructions
This is an individual submission. All students must submit individually via a link available in MOODLE

Learning Outcomes Assessed

* Reflect on the roles, responsibilities and attributes of a professional engineer

2 Written Assessment (Information Retrieval and Processing)

Assessment Type
Written Assessment

Task Description
Like assessment 1, this is also an individual submission item. In this task, for the engineering project listed in MOODLE, you as an engineering student should access relevant scientific and engineering databases and search engines and collect at least ten good-quality journal articles, conference papers, news articles, and technical reports from reliable sources on the specified activity topic. You will prepare and submit a literature review along with a critique of your findings. You will also showcase your ability to use a package such as EndNote to manage your bibliography.

Assessment Due Date
Week 8 Thursday (2 May 2024) 5:00 pm AEST
As per the CQU policy, 5% marks will be deducted for each day of delayed submission without prior approval.

Return Date to Students
Week 10 Thursday (16 May 2024)
It is expected that the assessment item will be returned in 2 weeks after the due date

Weighting
30%

Minimum mark or grade
50%

Assessment Criteria

1. Select one topic from your discipline from the list provided in MOODLE.
2. Develop a plan to find the required solution to the problem you have selected. You should develop a mind map to identify the various aspects of the problem you may have to investigate.
3. Using the Australian standard and other scientific databases (Scopus, Google Scholar, Science Direct, Web of Science, ProQuest, PubMed, Springer Link, etc.) and the Internet, conduct a literature search on your selected

aspect or topic.
4. Collect at least ten good journal articles on your topic.
5. Carefully read each article to understand what it is all about, what the contribution of the article is, what problem it solved, what remains, and what the limitations of this study are.
6. Summarise what your literature research conveys about your topic.
7. Accurately reference the work of third parties, words, figures, tables, etc., in accordance with CQU's Harvard referencing guide.

Assignments must be submitted electronically (in "word" format, **not pdf**) in Moodle. The file name should be in the format "Your first name_unit code_assessment number.docx". An example of a file format is "Nurun_ENEG28001_A2.docx"
Details are illustrated in the marking rubrics/criteria available in MOODLE.

Referencing Style

- Harvard (author-date)

Submission
Online

Submission Instructions
This is an individual submission. All students must submit individually via a link available in MOODLE.

Learning Outcomes Assessed

- Retrieve and manage technical information and critically assess its accuracy, reliability and authenticity
- Develop high quality engineering reports using different communication media and share them verbally and in written form
- Demonstrate ethical practice, accountability, and a commitment to lifelong learning, with specific reference to the Engineers Australia Code of Ethics.

3 Group Work (Team project)

Assessment Type
Group Work

Task Description
Unlike assessments 1 and 2, this is a team submission. Only one submission from each team is required. For this professional engineering project task, you have to choose a team, and each team will use Hybrid Optimization of Multiple Energy Resources (HOMER) software to carry out your team project work. You are required to prepare and submit a team project report with key findings from your project. This is team/group work, and only one submission is required from each team. Make sure the entire project task is distributed equally among your team members so that all team members work at an equal pace.

Assessment Due Date
Week 12 Thursday (30 May 2024) 5:00 pm AEST
As per the CQU policy, 5% marks will be deducted for each day of delayed submission without prior approval.

Return Date to Students

Marks will be disclosed on the certification of grades day.

Weighting
30%

Minimum mark or grade
50%

Assessment Criteria

1. You are required to form a TEAM with 3–4 students (this number may vary depending on the number of enrolments).
2. Select one discipline-specific topic from the list provided in Moodle.
3. With the help of your team members, find the required solution to the problem you have selected.
4. Accurately reference the work of third parties, words, figures, tables, etc., in accordance with CCU's Harvard referencing guide.
5. Since this is a collaborative project, each team's submission will be evaluated, and a grade will be assigned based on the criteria of this assessment. After that, individual grades will be calculated using the formula below, considering each member's contribution. An individual's mark may be higher than the team's mark but will be capped at the maximum mark of the assessment.

6. You must submit a team contribution table in the TEAM PROJECT REPORT (details are available in Moodle). Without this table, your submission will not be evaluated.
7. Unlike Assessments 1 and 2, this assessment is based on teamwork, and only one submission from each team is required.

Individual member's marks will be calculated using the following equation:
Individual student's mark = team total marks x (individual contribution / average team contribution).
For example, say,
Team A received 25 marks (out of 30) for their team project work. The individual contributions of 3 students in Team A are: Student 1 = 33%, Student 2 = 35%, and Student 3 = 32% (total = 33 + 35 + 32 = 100%). Average team contribution = 100/3 = 33.33%.
Thus, the individual marks will be calculated as follows:
Student 1 = 25 x (33/33.33) = 24.75 (out of 30)
Student 2 = 25 x (35/33.33) = 26.25 (out of 30)
Student 3 = 25 x (32/33.33) = 24.00 (out of 30)
Assignments must be submitted electronically (in "word" format, **not pdf**) in Moodle. The file name should be in the format "Your team name_unit code_assessment number.docx". An example of a file format is "Team A_ENEG28001_A3.docx"
Details are illustrated in the marking rubrics/criteria available in MOODLE.

Referencing Style

- Harvard (author-date)

Submission
Online Group

Submission Instructions
Only one submission from each team is required.

Learning Outcomes Assessed

- Develop sustainable solutions to complex engineering problems from socio-technical and environmental perspectives
- Apply systematic approaches to the conduct and management of engineering projects autonomously and as part of multidisciplinary and multicultural teams
- Demonstrate ethical practice, accountability, and a commitment to lifelong learning, with specific reference to the Engineers Australia Code of Ethics.

4 Presentation (Team Project Presentation)

Assessment Type
Presentation

Task Description
This is a team presentation. Each team will present its team project outcome in Week 11. All team members must attend and present their project. The detailed schedule for the presentation will be available in Unit Moodle in due time. Students are required to give a 10–12-minute oral presentation on their team project with PowerPoint (PPT) slides. Each team should upload PPT slides to the Moodle submission link at least 48 hours before the presentation. During the presentation, each team or group will present 10–12 minutes, followed by 5–6 minutes for questions and answers. **PLEASE NOTE THAT IT IS NOT POSSIBLE TO APPLY FOR A POSTPONEMENT OR EXTENSION FOR THIS ASSESSMENT**. Also, there is no opportunity to resubmit or redo this assessment.

Assessment Due Date
Week 11 Friday (24 May 2024) 5:00 pm AEST
All team members must attend and present their project outcome.

Return Date to Students
Review/Exam Week Friday (7 June 2024)
It is expected that the marks will be disclosed in two weeks after the presentation.

Weighting
20%

Minimum mark or grade
30%

Assessment Criteria

1. This is a face-to-face presentation. All team members should come to the presentation room and copy their PPT

slides to the dedicated computer at least 10 minutes before the presentation.
2. Accurately reference the work of third parties, words, figures, tables, etc., in accordance with CQU's Harvard referencing guide in your slides.
3. All team members should follow the dress code.
4. Presentations by all team members are mandatory.
5. Before your presentation, do some mock presentations with your peers.
6. Each team will present for ten to twelve minutes, followed by five to six minutes of questions and answers.
7. You will be given a warning one minute before the finishing time and a final warning at the finishing time.
8. Failure to attend the presentation will result in a "fail mark" in this assessment.

Assignments must be submitted electronically (in "ppt" format, **not pdf)** in Moodle. The file name should be in the format "Your Team name_unit code_assessment number.docx". An example of a file format is "Team A_ENEG28001_A4.pptx".
Details are illustrated in the marking rubrics/criteria available in MOODLE.

Referencing Style

- Harvard (author-date)

Submission
Online Group

Submission Instructions
There is no opportunity to resubmit/redo this assessment.

Learning Outcomes Assessed

- Retrieve and manage technical information and critically assess its accuracy, reliability and authenticity
- Develop high quality engineering reports using different communication media and share them verbally and in written form

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