



# ENEG20001 Australian Engineering Practice

## Term 1 - 2022

Profile information current as at 24/04/2024 10:36 pm

All details in this unit profile for ENEG20001 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

This unit introduces the context of Australian engineering practice, including the competency standards and codes of practice. You will study Australian engineering projects by summarising and reviewing the literature with emphasis on the technical methods and standards adopted, ethical practice, and professional responsibility. This unit 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 also prepare a scope for an investigation to demonstrate an understanding of the tasks involved in an Australian engineering feasibility investigation.

### Details

Career Level: *Postgraduate*

Unit Level: *Level 8*

Credit Points: *12*

Student Contribution Band: *2*

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 - 2022

- 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 12-credit Postgraduate 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: 30%

#### 2. **Written Assessment**

Weighting: 30%

#### 3. **Written Assessment**

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 "Have your say" in Moodle

**Feedback**

The unit coordinator did his best for the unit. However, because of COVID-19, there are challenging times for all of the students to receive the best education online.

**Recommendation**

Hopefully, everything, including all classes and tutorials/workshops will be face-to-face from the next offering.

#### Feedback from "Have your say" in Moodle

**Feedback**

The unit covers the real aspects of Australian Industry which is so helpful for international students.

**Recommendation**

The same practice with many updated resources will be continued in the next offering.

## Unit Learning Outcomes

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

1. Summarise technical publications using paraphrasing and references
2. Deconstruct a project into Engineers Australia's graduate competencies
3. Review Australian practice in a specialised field of engineering
4. Generate a scope for a feasibility study of an engineering project
5. Work collaboratively based on critical self-review of graduate competencies
6. Communicate effectively through technical writing and presentations.

The 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 Skill Base, 2. Engineering Application Ability and 3. Professional and Personal Attributes at the following levels:

#### Introductory

- 1.1 Comprehensive, theory-based understanding of the underpinning natural and physical sciences and the engineering fundamentals applicable to the engineering discipline. (LO: 2N 3N )
- 1.2 Conceptual understanding of the mathematics, numerical analysis, statistics, and computer and information sciences which underpin the engineering discipline. (LO: 2N 3N )
- 1.4 Discernment of knowledge development and research directions within the engineering discipline. (LO: 2N 3N 4N 5N 6N )
- 1.5 Knowledge of engineering design practice and contextual factors impacting the engineering discipline. (LO: 1N 2N 3N 4N 5N 6N )
- 3.3 Creative, innovative and pro-active demeanour. (LO: 3N 4N )

#### Intermediate

- 1.3 In-depth understanding of specialist bodies of knowledge within the engineering discipline. (LO: 6I )
- 1.6 Understanding of the scope, principles, norms, accountabilities and bounds of sustainable engineering practice in the specific discipline. (LO: 1N 2I 3I 4I 5N 6N )
- 2.2 Fluent application of engineering techniques, tools and resources. (LO: 1N 2N 3I 4I 5I 6I )
- 2.3 Application of systematic engineering synthesis and design processes. (LO: 1N 2N 3I 4I 5I 6I )
- 2.4 Application of systematic approaches to the conduct and management of engineering projects. (LO: 1N 2N 3I 4I 5N 6N )
- 3.1 Ethical conduct and professional accountability. (LO: 1N 2I 3N 4I 5I 6N )
- 3.2 Effective oral and written communication in professional and lay domains. (LO: 1I 2I 4I 5N 6I )
- 3.4 Professional use and management of information. (LO: 1I 3I 4I 5I 6I )
- 3.5 Orderly management of self, and professional conduct. (LO: 3N 5I )
- 3.6 Effective team membership and team leadership. (LO: 2N 4N 5I 6I )

#### Advanced

- 2.1 Application of established engineering methods to complex engineering problem solving. (LO: 1N 2A 3I 4I 5I 6I )

*Note: LO refers to the Learning Outcome number(s) which 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
<b>1 - Written Assessment - 30%</b>	•	•				



## Textbooks and Resources

### Textbooks

ENEG20001

#### Prescribed

#### The Making of an Expert Engineer

Edition: I (2014)

Authors: James P. Trevelyan

CRC Press

ISBN: 9781315742281

Binding: eBook

#### Additional Textbook Information

N.A.

### 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](mailto:m.nabi@cqu.edu.au)

## Schedule

### Week 1 - 07 Mar 2022

Module/Topic	Chapter	Events and Submissions/Topic
Introduction to Unit ENEG20001. What is an engineering practice? What is engineering practice in the Australian context (knowledge, engineering application and personal development)?	Preface, practice concept. Chapter 1-2. Additional resources will be available in Moodle.	View videos or texts related to famous engineering projects and discuss.

### Week 2 - 14 Mar 2022

Module/Topic	Chapter	Events and Submissions/Topic
Engineering ethics, Engineers Australia code of ethics (integrity, competence, leadership and sustainability), and professional misconduct.	Resources will be available in Moodle.	Tutorial on academic misconduct by the Academic Learning Centre (ALC)

### Week 3 - 21 Mar 2022

Module/Topic	Chapter	Events and Submissions/Topic
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Engineers roles and case studies of typical Australian engineering firms.	Chapter 5. Additional resources will be available in Moodle.	Writing exercises based on selected discipline-based case studies in the Australian context.
<b>Week 4 - 28 Mar 2022</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>
Australian standards, risk assessment, work health, safety and associated acts.	Chapter 9-10. Additional resources will be available in Moodle.	Exercises on risk assessment, the responsibilities of an engineer, review of code of ethics.
<b>Week 5 - 04 Apr 2022</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>
Engineering communication.	Resources will be available in Moodle.	The First Assessment (Individual) Item is due this week.  <b>Individual annotative bibliography and competency deconstruction</b> Due: Week 5 Thursday (7 Apr 2022) 3:00 pm AEST
<b>Vacation Week - 11 Apr 2022</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>
No classes and workshops are scheduled during vacation week.		
<b>Week 6 - 18 Apr 2022</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>
Engineering supervision and leadership.	Resources will be available in Moodle.	A tutorial on research tools and processes will be conducted by an ALC academic.
<b>Week 7 - 25 Apr 2022</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>
Engineering teams and team project formation.	Chapter 10. Additional resources will be available in Moodle.	Exercises in team formation, team charter, keeping minutes of meetings.
<b>Week 8 - 02 May 2022</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>
Scoping out feasibility investigations.	Chapter 10. Additional resources will be available in Moodle.	The Second Assessment (Individual) Item is due this week.  <b>Individual literature review and discipline summary</b> Due: Week 8 Thursday (5 May 2022) 3:00 pm AEST
<b>Week 9 - 09 May 2022</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>
Technical report (The content, including summary, table of contents, introduction, body, conclusions and recommendations, references and appendices).	Resources will be available in Moodle.	An ALC academic will discuss how to write a technical report. Exercises in team formation, team charter, keeping minutes of meetings.
<b>Week 10 - 16 May 2022</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>
Project management.	Chapter 10. Additional resources will be available in Moodle.	Exercises on planning and executing a project.
<b>Week 11 - 23 May 2022</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>

Reflective writing.

Resources will be available in Moodle.

How to reflect on job/project performance.

### Week 12 - 30 May 2022

Module/Topic

Chapter

Events and Submissions/Topic

Review of the term.

The Third Assessment (Team/Group) Item is due this Week.

**Team feasibility study and competency evaluation** Due: Week 12 Thursday (2 June 2022) 3:00 pm AEST

### Review/Exam Week - 06 Jun 2022

Module/Topic

Chapter

Events and Submissions/Topic

### Exam Week - 13 Jun 2022

Module/Topic

Chapter

Events and Submissions/Topic

## Assessment Tasks

### 1 Individual annotative bibliography and competency deconstruction

#### Assessment Type

Written Assessment

#### Task Description

This task consists of two parts. In Part A, you will choose one technical paper from a list of resources provided and summarise that paper by creating an annotated bibliography. To achieve this, you will need to demonstrate skills in reading, understanding and explaining the details of a technical paper; paraphrasing information to avoid plagiarism; and referencing to correctly acknowledge your sources of information.

In Part B, you will complete a table based on the 16 elements of the Engineers Australia's Stage 1 Competencies. For each element, you will describe how this competency is demonstrated specifically through the engineering practice described in the technical paper you have chosen. If any elements are not directly addressed, you will articulate assumptions for how they could or should be demonstrated.

#### Assessment Due Date

Week 5 Thursday (7 Apr 2022) 3:00 pm AEST

#### Return Date to Students

Week 7 Thursday (28 Apr 2022)

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

A Marking Rubric is provided on Moodle that includes indicators of attainment at the 'Poor', 'Sound', 'Good' and 'Excellent', levels for each element of the assignment.

#### Referencing Style

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

#### Submission

Online

#### Submission Instructions

Submission link will be provided on Moodle of this assessment item.

#### Learning Outcomes Assessed

- Summarise technical publications using paraphrasing and references
- Deconstruct a project into Engineers Australia's graduate competencies

## Graduate Attributes

- Knowledge
- Communication
- Cognitive, technical and creative skills
- Ethical and Professional Responsibility

## 2 Individual literature review and discipline summary

### Assessment Type

Written Assessment

### Task Description

This task also consists of two parts. In Part A, you will expand your annotated bibliography produced in Assignment 1 by completing a small literature review which incorporates published results from at least three other technical papers based on Australian projects in this area of practice. To achieve this, you will need to demonstrate referencing skills and the ability to synthesise information into a convincing and factual review. Your review should articulate points of agreement and disagreement and any gaps in the knowledge which have potential for future projects.

In Part B, you will prepare a description of Australian engineering practice after watching lectures that introduce various disciplines of engineering. You will need to understand the main organisations and technical societies operating in this discipline, what software is frequently used and what are some of the major projects being undertaken.

### Assessment Due Date

Week 8 Thursday (5 May 2022) 3:00 pm AEST

### Return Date to Students

Week 10 Thursday (19 May 2022)

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

A Marking Rubric is provided on Moodle that includes indicators of attainment at the 'Poor', 'Sound', 'Good' and 'Excellent', levels for each element of the assignment.

### Referencing Style

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

### Submission

Online

### Submission Instructions

Submission link will be provided on Moodle of this assessment item.

### Learning Outcomes Assessed

- Summarise technical publications using paraphrasing and references
- Review Australian practice in a specialised field of engineering
- Communicate effectively through technical writing and presentations.

## Graduate Attributes

- Knowledge
- Communication
- Cognitive, technical and creative skills
- Research
- Ethical and Professional Responsibility
- Leadership

## 3 Team feasibility study and competency evaluation

### Assessment Type

Written Assessment

### Task Description

Assessment 3 has two parts. In Part A, you will form a team with other students who completed A1 & A2 on similar topics. Your team will then combine your individual reviews to generate a comprehensive list of potential future projects.

Your team will then choose one of these projects and develop a scope of investigation for a hypothetical feasibility study. To achieve this, your team will need to create a persuasive narrative based on background research that justifies why the project should proceed. You will also need to create a single aim statement which is dissolved into a series of objectives that describe the main aspects of the study and how they might be undertaken. Also, your team will need to list inclusions, exclusions, assumptions and limitations to further define the scope of the hypothetical investigation. In Part B, your team will return to the stage 1 competencies and create a table that describes how each of the 16 elements are demonstrated through completing the feasibility study. Additionally, you will complete a self-review and allocate components of the study to team members based on their competencies.

**Assessment Due Date**

Week 12 Thursday (2 June 2022) 3:00 pm AEST

**Return Date to Students**

Exam Week Thursday (16 June 2022)

It is expected that the assessment item will be returned in 2 weeks after the due date.

**Weighting**

40%

**Minimum mark or grade**

50%

**Assessment Criteria**

A Marking Rubric is provided on Moodle that includes indicators of attainment at the 'Poor', 'Sound', 'Good' and 'Excellent', levels for each element of the assignment.

**Referencing Style**

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

**Submission**

Online Group

**Submission Instructions**

Submission link will be provided on Moodle of this assessment item

**Learning Outcomes Assessed**

- Deconstruct a project into Engineers Australia's graduate competencies
- Generate a scope for a feasibility study of an engineering project
- Work collaboratively based on critical self-review of graduate competencies
- Communicate effectively through technical writing and presentations.

**Graduate Attributes**

- Knowledge
- Communication
- Cognitive, technical and creative skills
- Research
- Self-management
- Ethical and Professional Responsibility
- Leadership

## 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