ENEG20001 *Australian Engineering Practice*
Term 3 - 2023

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 3 - 2023
- Melbourne
- Online
- Perth
- 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 Students Feedback from evaluation team

Feedback
Link content to real world applications

Recommendation
We appreciate the constructive feedback. The next offering will add more relevant materials for real-world applications linked to the content.

Feedback from Students Feedback from evaluation team

Feedback
This unit is well designed for professional engineering skills in terms of speaking and writing.

Recommendation
This good practice will continue.

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**
1 - Written Assessment - 30%	●	●				

Assessment Tasks	Learning Outcomes					
	1	2	3	4	5	6
2 - Written Assessment - 30%	●		●			●
3 - Written Assessment - 40%		●		●	●	●

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						

Alignment of Assessment Tasks to Graduate Attributes

Assessment Tasks	Graduate Attributes							
	1	2	3	4	5	6	7	8
1 - Written Assessment - 30%	○	○	○			○		
2 - Written Assessment - 30%	○	○	○	○		○	○	
3 - Written Assessment - 40%	○	○	○	○	○	○	○	

Textbooks and Resources

Textbooks
ENEG20001

Prescribed

The Making of an Expert Engineer by James Trevelyan (CRC Press 2014).
(2014)
Authors: James Trevelyan
Binding: Hardcover

IT Resources

You will need access to the following IT resources:

- CQUniversity Student Email
- Internet
- Unit Website (Moodle)
- Microsft Office (Word, Excel, PowerPoint)

Referencing Style

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

Teaching Contacts

Neamul Khandoker Unit Coordinator
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Schedule

Week 1 - 06 Nov 2023

Module/Topic	Chapter	Events and Submissions/Topic
Introduction to Unit Fundamentals of Engineering Practice What makes an Engineer? Competencies, Skills, Qualities and Attributes	The making of an expert engineer. Chapter: Preface, practice concept, 1-2. Additional resources will be available in Moodle.	View videos or texts related to famous engineering projects and discuss. Skills Audit, SWOT Analysis Commence development of E-portfolio of Reflective Practice

Week 2 - 13 Nov 2023

Module/Topic	Chapter	Events and Submissions/Topic
Engineer's Code of Ethics	Lecture notes The making of an expert engineer. Chapter: 2-5 Additional resources will be available in Moodle.	Guest Lecture 1 Academic Integrity and Ethical Conduct. E-portfolio of Reflective Practice continues.

Week 3 - 20 Nov 2023

Module/Topic	Chapter	Events and Submissions/Topic
Information Literacy - Retrieval, Analysis, Storage, Sharing	Lecture notes Additional resources will be available in Moodle.	Writing exercises based on selected discipline-based case studies in the Australian context. ENDNOTE Demonstration E-portfolio of Reflective Practice continues.

Week 4 - 27 Nov 2023

Module/Topic	Chapter	Events and Submissions/Topic
Technical skills	Lecture notes Additional resources will be available in Moodle.	Advanced use of Excel in Engineering E-portfolio of Reflective Practice continues.

Vacation Week - 04 Dec 2023

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

Week 5 - 11 Dec 2023

Module/Topic	Chapter	Events and Submissions/Topic
Referencing and Turnitin	Lecture Notes. Additional resources will be available in Moodle.	Exercises on Literature surveys, databases and search engines E-portfolio of Reflective Practice continues..

Week 6 - 18 Dec 2023

Module/Topic	Chapter	Events and Submissions/Topic
Engineering communication, Teams, and Collaboration	Lecture notes Additional resources will be available in Moodle.	E-portfolio of reflective practice continues. **Professional Competencies Portfolio (Individual)** Due: Week 6 Monday (18 Dec 2023) 11:45 pm AEST

Vacation Week - 25 Dec 2023

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

Week 7 - 01 Jan 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.	OHS Act, Legislations, RA and RMPs E-portfolio of Reflective Practice continues.

Week 8 - 08 Jan 2024

Module/Topic	Chapter	Events and Submissions/Topic
WIL & CPD	Resources will be available in Moodle.	E-portfolio of Reflective Practice continues.

Week 9 - 15 Jan 2024

Module/Topic	Chapter	Events and Submissions/Topic
Self-management and Professional Responsibility	Resources will be available in Moodle.	E-portfolio of Reflective Practice continues. **Information Retrieval and Processing (Individual)** Due: Week 9 Monday (15 Jan 2024) 11:45 pm AEST

Week 10 - 22 Jan 2024

Module/Topic	Chapter	Events and Submissions/Topic
Engineering Project Management	The Making of an expert engineer, Chapter: 10, 12 Additional resources will be available in Moodle.	E-portfolio of Reflective Practice continues.

Week 11 - 29 Jan 2024

Module/Topic	Chapter	Events and Submissions/Topic

| Reflective writing | Resources will be available in Moodle. | How to reflect on job/project performance.
E-portfolio of Reflective Practice continues |

Week 12 - 05 Feb 2024

Module/Topic	Chapter	Events and Submissions/Topic
Review of the term.		**Professional Practice Project (Team)** Due: Week 12 Friday (9 Feb 2024) 11:45 pm AEST

Exam Week - 12 Feb 2024

Module/Topic	Chapter	Events and Submissions/Topic

Assessment Tasks

1 Professional Competencies Portfolio (Individual)

Assessment Type
Written Assessment

Task Description
This task consists of two parts. In Part A, you will carry out a 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 subdiscipline you wish to specialize in and why?
In Part B, summarize 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.
You need to record your activities on a weekly basis and complete an e-portfolio to submit in Week 13 along with your final Assessment 3.

Assessment Due Date
Week 6 Monday (18 Dec 2023) 11:45 pm AEST
Individual submission

Return Date to Students
Week 8 Friday (12 Jan 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
A Marking Rubric will be provided on Moodle.

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 Information Retrieval and Processing (Individual)

Assessment Type
Written Assessment

Task Description

In this task, for the engineering project you have chosen as a team, each team member will access relevant scientific and engineering databases and search engines and collect at least a total of 10 good-quality journal articles, conference papers, news articles and/or technical reports on the specified activity topic. You will prepare and submit an individual annotated bibliography 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 9 Monday (15 Jan 2024) 11:45 pm AEST
Individual submission

Return Date to Students
Week 11 Friday (2 Feb 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
A Marking Rubric is provided on Moodle.

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 Professional Practice Project (Team)

Assessment Type
Written Assessment

Task Description
This is a team project. You will form a team of 3 members. You will select any one engineering problem that is posted in the handout and get it approved by your UC. You will evolve a plan of action to solve the problem you have selected by systematically applying all the knowledge you are acquiring in this unit. This will include your engineering and technical knowledge and skills, professional skills such as information management, communication, leadership and collaboration, engineering ethics and professional responsibility.
You will submit a team report of your proposal. This submission will also include a section on reflective practice where each team member will capture how they have showcased their Stage 1 Engineering Competencies, what challenges the team has faced and how the team overcame them.

Assessment Due Date
Week 12 Friday (9 Feb 2024) 11:45 pm AEST
Team submission (Only one submission from Each Team)

Return Date to Students
Exam Week Friday (16 Feb 2024)
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', 'Excellent', etc., 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