



ENRP20001 Engineering Research Project Planning

Term 1 - 2023

Profile information current as at 07/05/2024 11:51 am

All details in this unit profile for ENRP20001 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 is specifically designed so that students can apply the processes of research investigation through the analysis of, reflection on and critique of, an area of their professional practice. The unit uses a problem-based learning approach within an authentic workplace learning environment. This ensures students are undertaking an investigation that is relevant to the needs of industry. Students will apply an appropriate research methodology that suits their research problem. At the end of this unit, students will have developed a project plan that they will implement in the follow-on unit Engineering Research Project Implementation.

Details

Career Level: *Postgraduate*

Unit Level: *Level 9*

Credit Points: *12*

Student Contribution Band: *8*

Fraction of Full-Time Student Load: *0.25*

Pre-requisites or Co-requisites

Students must have completed a minimum of 36 credit points and approval of the Head of course or delegate is required. Students must have a project topic and academic supervisor before they can be enrolled.

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 - 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. **Report**

Weighting: 10%

2. **Literature Review or Systematic Review**

Weighting: 20%

3. **Presentation**

Weighting: 20%

4. **Portfolio**

Weighting: 50%

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 Unit evaluation

Feedback

It would be good to allow for more discussion with the supervisor.

Recommendation

A weekly 30-minute meeting with the supervisor is the usual practice but students can request a bit longer time with the supervisor if needed depending on the project's complexity.

Feedback from Unit evaluation

Feedback

The requirements for the assessments sometimes were unclear in the particular structure of the reports.

Recommendation

A clear assessment criterion has been provided on Moodle under the Assessment blog. It was also discussed clearly in class. Students will be advised to access the recordings and unit resources on weekly basis.

Feedback from Unit evaluation

Feedback

The students with experimental activity in the project would have a weekly meeting with lab staff.

Recommendation

It would be challenging for lab staff to schedule a weekly meeting with every student. However, students and supervisors will be advised to organise a special arrangement with relevant lab staff to discuss the laboratory activities pertinent to the project.

Unit Learning Outcomes

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

1. Identify a suitable problem related to the study discipline
2. Develop a research question including identifying key words
3. Conduct an indepth review of related literature
4. Select an appropriate research methodology to investigate the problem
5. Regularly communicate professionally with all stakeholders in formal and informal reports
6. Professionally present the project plan in a seminar and defend the methodology adopted.

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:

Intermediate

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

3.1 Ethical conduct and professional accountability. (LO: 3I)

Advanced

1.3 In-depth understanding of specialist bodies of knowledge within the engineering discipline. (LO: 1A 4A)

1.4 Discernment of knowledge development and research directions within the engineering discipline. (LO: 1A 2A 3A)

1.5 Knowledge of engineering design practice and contextual factors impacting the engineering discipline. (LO: 2A 4A)

1.6 Understanding of the scope, principles, norms, accountabilities and bounds of sustainable engineering practice in the specific discipline. (LO: 4A)

2.1 Application of established engineering methods to complex engineering problem solving. (LO: 4A)

2.4 Application of systematic approaches to the conduct and management of engineering projects. (LO: 1A 2A 3A 4A)

3.2 Effective oral and written communication in professional and lay domains. (LO: 5A 6A)

3.3 Creative, innovative and pro-active demeanour. (LO: 4A)

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

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

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



Alignment of Assessment Tasks to Learning Outcomes

Assessment Tasks	Learning Outcomes					
	1	2	3	4	5	6
1 - Report - 10%	•	•				
2 - Literature Review or Systematic Review - 20%			•			
3 - Presentation - 20%				•		•
4 - Portfolio - 50%	•	•	•	•	•	

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 - Report - 10%	○	○	○	○				
2 - Literature Review or Systematic Review - 20%	○	○		○				
3 - Presentation - 20%	○	○	○	○		○		
4 - Portfolio - 50%	○	○	○	○		○		

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

Kalam Azad Unit Coordinator
a.k.azad@cqu.edu.au

Schedule

Week 1 - 06 Mar 2023

Module/Topic	Chapter	Events and Submissions/Topic
1. Introduction to the Unit 2. Introduction to Engineering Projects 3. How to develop an Engineering Project Proposal/Introduction.	Lecture notes Reading: Leong E.C., et al - Chapter 3, 4, 5	Activity: 1. Select/finalize Project Topic and commence developing your project proposal. 2. Set up communication strategies with the Project Supervisor. 3. Set up weekly meeting logs, use a 4-square chart available on Moodle, and forward it to your advisor every week after the meeting.

Week 2 - 13 Mar 2023

Module/Topic	Chapter	Events and Submissions/Topic
1. Developing Engineering Projects 2. Initiating ideas/topics 3. The Preliminary Literature Research 4. Developing Aim and objectives, and scoping projects	Lecture notes Reading: Leong E.C., et al - Chapter 2, 3	Activity: 1. Finalize topic. Finalize proposal. Get signatures from all stakeholders. 2. Project Proposal Due by Friday of Week 2. Check submission guidelines on Moodle.

Week 3 - 20 Mar 2023

Module/Topic	Chapter	Events and Submissions/Topic
1. Conducting Literature Research - Search, Retrieve, Interpret and Adopt 2. Search strategies - Identifying search elements, Developing themes, Mindmaps 3. Search Options 4. Managing Literature - Using ENDNOTE	Lecture notes Reading: Leong E.C., et al - Chapter 4, 5, 9	Activity: 1. Commence literature research 2. Commence Planning thesis development (Refer to Reading: Leong E.C. et al - Chapter 13)

Week 4 - 27 Mar 2023

Module/Topic	Chapter	Events and Submissions/Topic
1. Interpreting and annotating literature 2. Citation Styles 3. Developing critique	Lecture notes Reading: Leong E.C., et al - Chapter 4, 18, 19	Activity: 1. Literature Research continues 2. Commence developing the LR chapter 3. Thesis development continues Introduction (aim, objectives and scope) Due: Week 4 Monday (27 Mar 2023) 12:00 am AEST

Week 5 - 03 Apr 2023

Module/Topic	Chapter	Events and Submissions/Topic
1. Engineering Project Methodology - Types and approaches 2. Waterfall and Agile Project Methodologies	Lecture Notes Reading: Leong E.C., et al - Chapter 7, 8	Activity: 1. Literature Research continues 2. LR chapter - further development 3. Commence your project methodology 4. Thesis development continues

Vacation Week - 10 Apr 2023

Module/Topic	Chapter	Events and Submissions/Topic
No teaching material will be delivered during the vacation week.		

Week 6 - 17 Apr 2023

Module/Topic	Chapter	Events and Submissions/Topic
1. Design of Experiments	Lecture Notes Reading: Leong E.C., et al - Chapter 14	Activity: <ol style="list-style-type: none"> 1. Finalize Project Methodology 2. Thesis development continues Literature Review Due: Week 6 Friday (21 Apr 2023) 12:00 am AEST

Week 7 - 24 Apr 2023

Module/Topic	Chapter	Events and Submissions/Topic
<ol style="list-style-type: none"> 1. Project Planning 2. Project Scheduling 3. Gantt Charts 4. Resource Audit 	Lecture notes Reading: Leong E.C., et al - Chapter 6	Activity: <ol style="list-style-type: none"> 1. Finalize Design of Experiments 2. Thesis development continues

Week 8 - 01 May 2023

Module/Topic	Chapter	Events and Submissions/Topic
<ol style="list-style-type: none"> 1. Engineering Project Risk Analysis - Risk Event, Time frame, Probability, Impact and Factors 2. Undertaking Project RA 3. Risk Assessment and Risk Management Plan 	Lecture notes Reading: Leong E.C., et al - Chapter 3, 4	Activity: <ol style="list-style-type: none"> 1. Commence planning and scheduling activities 2. Develop project budget and Gantt charts 3. Allocate resources 4. Thesis development continues

Week 9 - 08 May 2023

Module/Topic	Chapter	Events and Submissions/Topic
<ol style="list-style-type: none"> 1. Planning Thesis finalization - Tying it all together 2. Preparing your oral presentation 	Lecture Notes Reading: Leong E.C., et al - Chapter 10, 11, 12 Reading: Leong E.C., et al - Chapter 23	Activity: <ol style="list-style-type: none"> 1. Commence RA and RMP. Get relevant approvals 2. Thesis development continues

Week 10 - 15 May 2023

Module/Topic	Chapter	Events and Submissions/Topic
Activities continue		Activity: <ol style="list-style-type: none"> 1. Planning Thesis development continues. 2. Methodology Presentation on Week 10 Friday. Methodology Presentation Due: Week 10 Friday (19 May 2023) 5:00 pm AEST

Week 11 - 22 May 2023

Module/Topic	Chapter	Events and Submissions/Topic
Activities continue		Activity: Planning Thesis development continues

Week 12 - 29 May 2023

Module/Topic	Chapter	Events and Submissions/Topic
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Planning Thesis ready for submission.

Activity:

Planning Thesis finalizing for submission

Review/Exam Week - 05 Jun 2023

Module/Topic	Chapter	Events and Submissions/Topic
Planning Thesis Due: Review/Exam Week Monday (5 June 2023) 12:00 am AEST		

Exam Week - 12 Jun 2023

Module/Topic	Chapter	Events and Submissions/Topic
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Assessment Tasks

1 Introduction (aim, objectives and scope)

Assessment Type

Report

Task Description

You will write a project Introduction, a clear aim, objectives and scope, study enough literature relevant to your project, provide introduction and literature findings, a basic understanding of the research problem, rationale, deliverable, stakeholder/s, list of references and other information required. Lectures on project proposals and relevant topics will be given and it is crucial that you attend and attend all weekly meetings with the supervisor.

Assessment Due Date

Week 4 Monday (27 Mar 2023) 12:00 am AEST

Submission via Moodle site

Return Date to Students

Week 5 Friday (7 Apr 2023)

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

Weighting

10%

Minimum mark or grade

25%

Assessment Criteria

Appropriate title page, introduction and scope, aim and objectives, equipment and tools required and others are the major assessable portions of the Project Proposal document.

Detailed Assessment Criteria will be available on the Moodle site.

Important Information:

The students MUST submit all required assessments by their due dates as no late submission will be accepted (this is professional practice). If an extension is required, please ensure the extension request reaches the Unit Coordinator **AT LEAST 72** hours prior to the deadline unless specified otherwise in the assessment tasks. Application for an extension after the due date may not be acceptable.

According to the **Assessment Policy, Section 5.16**, the acceptable reasons for extension are disability, medical or health-related condition, hardship (serious accident), compassionate circumstances (death of a family member) etc., with providing evidence.

Late Submission Penalty: A late submission penalty of **5% per day** of the total available marks for the assessment will be deducted for each full or part calendar day the task is overdue will be applied in this unit, according to the University **Assessment Policy (Section 5.42)**. The penalty must be a **NEGATIVE** score that will be deducted from the overall mark and calculated based on late submission status.

Referencing Style

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

Submission

Online

Submission Instructions

.pdf file

Learning Outcomes Assessed

- Identify a suitable problem related to the study discipline
- Develop a research question including identifying key words

Graduate Attributes

- Knowledge
- Communication
- Cognitive, technical and creative skills
- Research

2 Literature Review

Assessment Type

Literature Review or Systematic Review

Task Description

The Updated Project introduction should address the feedback from the supervisor and provide a background to the project, including a brief literature review to contextualise the project. It should include realistic aims and objectives and identify expected outcomes.

You should critically evaluate and present the literature review on your research topic. It is important that the literature you use are directly relevant to your project topic and support your project rationale.

Assessment Due Date

Week 6 Friday (21 Apr 2023) 12:00 am AEST

Submission via Moodle site

Return Date to Students

Week 8 Friday (5 May 2023)

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

Weighting

20%

Minimum mark or grade

50%

Assessment Criteria

The extent to which

- the project background is clearly written.
- the context justifies the need for the work.
- the aims and objectives are clear and realistic.
- the proposal is supported by relevant literature
- appropriate quality and a good number of literature reviews.
- literature is critically evaluated

Detailed Assessment Criteria will be available on Moodle site.

Important Information:

The students **MUST** submit all required assessments by their due dates as no late submission will be accepted (this is professional practice). If an extension is required, please ensure the extension request reaches the Unit Coordinator **AT LEAST 72** hours prior to the deadline unless specified otherwise in the assessment tasks. Application for an extension after the due date may not be acceptable.

According to the **Assessment Policy, Section 5.16**, the acceptable reasons for extension are disability, medical or health-related condition, hardship (serious accident), compassionate circumstances (death of a family member) etc., with providing evidence.

Late Submission Penalty: A late submission penalty of **5% per day** of the total available marks for the assessment will be deducted for each full or part calendar day the task is overdue will be applied in this unit, according to the University **Assessment Policy (Section 5.42)**. The penalty must be a **NEGATIVE** score that will be deducted from the

overall mark and calculated based on late submission status.

Referencing Style

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

Submission

Online

Submission Instructions

.pdf

Learning Outcomes Assessed

- Conduct an indepth review of related literature

Graduate Attributes

- Knowledge
- Communication
- Research

3 Methodology Presentation

Assessment Type

Presentation

Task Description

Students are required to do a 10 to 12 -minute oral presentation on their project plan.

Prepare PowerPoint (PPT) slides must be submitted **at least 24 hours** before the presentation. During the presentation, every student will get an equal opportunity to present for **10 to 12 mins** followed by **6 to 7 mins** for the **Q&A session**. Presentations cannot be rescheduled and an extension request is not acceptable.

Assessment Due Date

Week 10 Friday (19 May 2023) 5:00 pm AEST

Individual student presentation schedule will be provided on the Moodle site.

Return Date to Students

Week 12 Friday (2 June 2023)

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

Weighting

20%

Minimum mark or grade

50%

Assessment Criteria

Aim and objective, depth of literature review, appropriateness of proposed research methodology, presentation style and skills and answering questions are the major assessable items.

Detailed Assessment Criteria will be available on the course website.

Referencing Style

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

Submission

Online

Submission Instructions

You are required to present at your scheduled time.

Learning Outcomes Assessed

- Select an appropriate research methodology to investigate the problem
- Professionally present the project plan in a seminar and defend the methodology adopted.

Graduate Attributes

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

4 Planning Thesis

Assessment Type

Portfolio

Task Description

Submit the planning report that you are going to implement in the ENRP20003 Engineering Research Project Implementation unit. You are expected to structure your report as follows:

- Title Page
- Abstract
- Acknowledgements
- Table of Contents
- List of Figures
- List of Tables
- Introduction
- Literature Review
- Methodology
- Risk Assessment
- Conclusion
- References
- Appendices as appropriate

Important Information:

The students **MUST** submit all required assessments by their due dates as no late submission will be accepted (this is professional practice). If an extension is required, please ensure the extension request reaches the Unit Coordinator **AT LEAST 72** hours prior to the deadline unless specified otherwise in the assessment tasks. Application for an extension after the due date may not be acceptable.

According to the **Assessment Policy, Section 5.16**, the acceptable reasons for extension are disability, medical or health-related condition, hardship (serious accident), compassionate circumstances (death of a family member) etc., with providing evidence for no more than seven days.

Late Submission Penalty: A late submission penalty of **5% per day** of the total available marks for the assessment will be deducted for each full or part calendar day the task is overdue will be applied in this unit, according to the University **Assessment Policy (Section 5.42)**. The penalty must be a **NEGATIVE** score that will be deducted from the overall mark and calculated based on late submission status.

Assessment Due Date

Review/Exam Week Monday (5 June 2023) 12:00 am AEST

Submission via Moodle site.

Return Date to Students

Exam Week Monday (12 June 2023)

After the certification of grades.

Weighting

50%

Minimum mark or grade

50%

Assessment Criteria

The project report will be evaluated based on the quality of individual chapters and the comprehensive of the whole project and the thesis report.

Referencing Style

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

Submission

Online

Submission Instructions

.pdf

Learning Outcomes Assessed

- Identify a suitable problem related to the study discipline
- Develop a research question including identifying key words
- Conduct an indepth review of related literature
- Select an appropriate research methodology to investigate the problem
- Regularly communicate professionally with all stakeholders in formal and informal reports

Graduate Attributes

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

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