



# ENRP20001 Engineering Research Project

## Planning

### Term 1 - 2017

Profile information current as at 11/04/2024 08:17 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

Departmental consent 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 - 2017

- Distance

### 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. **Portfolio**

Weighting: 100%

### Assessment Grading

This is a graded unit: your overall grade will be calculated from the marks or grades for each assessment task, based on the relative weightings shown in the table above. You must obtain an overall mark for the unit of at least 50%, or an overall grade of 'pass' in order to pass the unit. If any 'pass/fail' tasks are shown in the table above they must also be completed successfully ('pass' grade). You must also meet any minimum mark requirements specified for a particular assessment task, as detailed in the 'assessment task' section (note that in some instances, the minimum mark for a task may be greater than 50%). Consult the [University's Grades and Results Policy](#) for more details of interim results and final grades.

## CQUniversity Policies

**All University policies are available on the [CQUniversity Policy site](#).**

You may wish to view these policies:

- Grades and Results Policy
- Assessment Policy and Procedure (Higher Education Coursework)
- Review of Grade Procedure
- Student Academic Integrity Policy and Procedure
- Monitoring Academic Progress (MAP) Policy and Procedure – Domestic Students
- Monitoring Academic Progress (MAP) Policy and Procedure – International Students
- Student Refund and Credit Balance Policy and Procedure
- Student Feedback – Compliments and Complaints Policy and Procedure
- Information and Communications Technology Acceptable Use Policy and Procedure

This list is not an exhaustive list of all University policies. The full list of University policies are available on the [CQUniversity Policy site](#).

## Previous Student Feedback

### Feedback, Recommendations and Responses

Every unit is reviewed for enhancement each year. At the most recent review, the following staff and student feedback items were identified and recommendations were made.

#### Feedback from Course evaluation

##### **Feedback**

The course teaches how to research and plan a project. Benchmark industry practices and processes and be able to improve workplace. Intensive contact with course coordinator and supervisor, develops a unique control over what you do and develops you in terms of confidence in dealing with organisational maintenance issues.

##### **Recommendation**

Thank you for the good comments. Will try to maintain these aspects of the unit delivery.

#### Feedback from Course evaluation

##### **Feedback**

More time is required for working students to do some research.

##### **Recommendation**

Unfortunately it will be difficult to address as we have to maintain AQF9 standard for all the students (working or not working).

#### Feedback from Course evaluation

##### **Feedback**

A once off seminar with a successful industry expert, whether a Consultant or business manager on a topic related to engineering research and solving company problems would enhance this course greatly.

##### **Recommendation**

It's a good suggestion. We will try to implement this in future if an expert or industry person can be made available.

## 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. Communicate effectively in formal and informal reports and in professional presentations and project documentation.

n/a

## Alignment of Learning Outcomes, Assessment and Graduate Attributes

 N/A Level	 Introductory Level	 Intermediate Level	 Graduate Level	 Professional Level	 Advanced Level
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### Alignment of Assessment Tasks to Learning Outcomes

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

### Alignment of Graduate Attributes to Learning Outcomes

Graduate Attributes	Learning Outcomes				
	1	2	3	4	5
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 - Portfolio - 100%	◦	◦	◦	◦	◦	◦	◦	

## Textbooks and Resources

### Textbooks

ENRP20001

#### Prescribed

**Guide to Research Projects for Engineering Students: Planning, Writing and Presenting**  
(2015)

Authors: Leong, E. C., Heah, C. L. H., & Ong, K. K. W.

CRC Press

US

Binding: Hardcover

#### Additional Textbook Information

This book is also available in Kindle edition. However, paper copies are still available at the CQUni Bookshop [here](#).

[View textbooks at the CQUniversity Bookshop](#)

### IT Resources

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

- CQUniversity Student Email
- Internet
- Unit Website (Moodle)
- CQUniversity library literature search tools

## Referencing Style

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

## Teaching Contacts

**Mohammad Rasul** Unit Coordinator

[m.rasul@cqu.edu.au](mailto:m.rasul@cqu.edu.au)

## Schedule

### Week 1 - 06 Mar 2017

Module/Topic	Chapter	Events and Submissions/Topic
Carry out preliminary self-assessment. Begin project investigation.		Make an appointment and have a meeting with your supervisor to discuss the project requirements and topic.

### Week 2 - 13 Mar 2017

Module/Topic	Chapter	Events and Submissions/Topic
Find, read and prepare background information for project.		Have a meeting with your supervisor to discuss and fine tune project scopes and objectives. Finalize your project topic.

### Week 3 - 20 Mar 2017

Module/Topic	Chapter	Events and Submissions/Topic
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Continue research. Complete your chapter 1 with detailed background and introduction of the project, objectives and scopes of the project, limitations, chapter outlines for whole project planning report, etc.

Progress report 1, Due Friday of week 3 by midnight.  
**Submit your progress report 1** which is basically chapter 1 of your report to your supervisor for feedback and discussion.

#### Week 4 - 27 Mar 2017

Module/Topic	Chapter	Events and Submissions/Topic
Continue research. Generate initial structure and formulate contents of your literature review chapter.		Have a meeting with your supervisor to discuss about your full literature review chapter.

#### Week 5 - 03 Apr 2017

Module/Topic	Chapter	Events and Submissions/Topic
Continue research. Prepare to submit full literature review chapter to your supervisor.		Progress report 2, Due Friday of week 5 by midnight. <b>Submit your progress report 2</b> which is basically a complete literature review chapter (chapter 2) of your report to your supervisor for feedback and discussion.

#### Vacation Week - 10 Apr 2017

Module/Topic	Chapter	Events and Submissions/Topic
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#### Week 6 - 17 Apr 2017

Module/Topic	Chapter	Events and Submissions/Topic
Continue research. Prepare a framework and works for development of methodology chapter.		Have a meeting with your supervisor to discuss about your methodology chapter.

#### Week 7 - 24 Apr 2017

Module/Topic	Chapter	Events and Submissions/Topic
Continue research. Start writing project methodology.		Progress report 3, Due Friday of week 7 by midnight. <b>Submit your progress report 3</b> which is basically a complete methodology chapter to your supervisor for feedback and discussion.

#### Week 8 - 01 May 2017

Module/Topic	Chapter	Events and Submissions/Topic
Continue research. Start writing a draft project planning report.		Have a meeting with your supervisor to discuss about your draft report.

#### Week 9 - 08 May 2017

Module/Topic	Chapter	Events and Submissions/Topic
Continue research. Works towards completing your draft planning report.		Draft planning report, Due Friday of week 9 by midnight. <b>Submit draft Planning Report</b> to your academic supervisor for feedback. You will not be able to submit your final report until you have received feedback on your draft report.

#### Week 10 - 15 May 2017

Module/Topic	Chapter	Events and Submissions/Topic
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Continue research. Re-think and revise the project scopes (if needed), prepare outline and work on your portfolio submission.  
Check all compulsory items are being addressed.

Have a meeting with your supervisor to discuss about your portfolio submission.

#### Week 11 - 22 May 2017

Module/Topic	Chapter	Events and Submissions/Topic
Review and finalise all elements of project folder. Address feedback from your supervisor.		Have a meeting with your supervisor to discuss about your portfolio submission and addressing feedback provided by your supervisor.

#### Week 12 - 29 May 2017

Module/Topic	Chapter	Events and Submissions/Topic
Review and finalise all the elements of project folder prior to submission. Submit your portfolio by Friday midnight of this week.		<b>Portfolio Due:</b> Week 12 Friday (2 June 2017) 11:45 pm AEST

#### Review/Exam Week - 05 Jun 2017

Module/Topic	Chapter	Events and Submissions/Topic
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#### Exam Week - 12 Jun 2017

Module/Topic	Chapter	Events and Submissions/Topic
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## Assessment Tasks

### 1 Portfolio

#### Assessment Type

Portfolio

#### Task Description

Project portfolio comprises of final project planning report followed by a few pages reflective paper i.e. your reflection on your learning journey and achievement in planning, and project risk assessment. Omission of any of the compulsory items may result in Fail grade. Further information on each of the compulsory items is available on the Moodle web site of this unit.

This is an individual project. All the resources for the unit are available on the Moodle web page of this unit. There are no face-to-face lectures or tutorials for this unit. It is the student's responsibility to monitor progress, manage and drive the project, seek assistance if required and arrange a regular reporting/meeting schedule with their academic supervisor.

The report will be assessed based on your demonstrated capability. You should show that you have;

1. formed a suitable problem definition for the project
2. extracted relevant information from all available sources (including all forms of information technology, library searching, client and colleague expertise, and trade literature) related to the task
3. planned and scheduled the project as a major engineering project in order to maximise the probability of a successful research outcome
4. demonstrated the ability to adhere to work schedules
5. demonstrated a detailed technical knowledge of the project area and proficiency in all technical aspects of the project
6. developed the ability to think critically and to make sound judgement
7. demonstrated the ability to communicate effectively (e.g. engineering report).

#### PROPOSAL

You are responsible for preparing a project concept and short proposal within a page, and negotiating with academic staff to **obtain a Project Supervisor before enrollment** can be authorised by the Unit Coordinator. A good project has the following characteristics:

1. It needs to be reasonably complex, that is, it should bring together skills and knowledge from a range of units that you have done during your degree so that you can demonstrate your ability to select and integrate these in the context of the project.
2. You will need to be able to demonstrate applied engineering and appropriate research skills. There are variety of ways

that you can do this depending on the nature of the project.

3. The size of the project is important. It should not be so big that you will not be able to complete it in the time available and not so small that it becomes almost trivial.

4. Projects should demonstrate generic skills such as performing of analysis, conducting of testing and/or simulation, formulation of results and drawing of conclusions.

### **PROGRESS REPORTS**

Assessment will be based on the quality of three progress reports submitted.

Progress reports should be **emailed to your Project Supervisor**. Dates for submission of progress reports are specified in the study schedule. The Supervisor will maintain a file of these reports and assess your work based on the reports and adherence to the schedule. Each progress report should present important issues and problems you faced, major decisions made, your progress over the past period and planned activities for the following period, until next report due.

Students must contact and communicate with their Supervisor regularly (email, telephone, etc). If necessary the work plan may be updated by negotiation with your Supervisor. Students who fail to communicate with their Supervisor for more than four (4) weeks without prior arrangement may be asked to show cause why a grade of **FAIL** should not be given.

**Before** any laboratory or workshop activities (if applicable) commence, or before any materials are brought to the University for construction or testing purposes, students are required to prepare project work plans and **conduct risk assessments** in line with the University policy documents. Failure to comply with this requirement will result in a **FAIL**.

### **DRAFT REPORT**

Students are required to submit a draft report of their project to their Supervisor in Week 9 for feedback. Remember you will not be able to submit your final report until you have received feedback and addressed those feedback into final report.

### **REPORT LAYOUT**

#### **Title page**

Title

School name

Student name and student number

Supervisor's name

Unit code and name

The Term and Year of unit enrollment.

#### **Executive summary**

**No more than two pages giving an overview of the project objectives, thesis content, results and discussion and a brief conclusion.**

#### **Acknowledgements**

#### **Table of contents**

#### **List of Figures**

#### **List of Tables Nomenclature**

#### **Introduction**

Background into the project including the rationale supporting the need to undertake, general background, significance, and defining the objectives, scopes and limitations.

#### **Literature review**

A literature review is an account of IMPORTANT information has been published on topics related to your project by recognised scholars, workers and researchers. Quality is more important than quantity. You should identify the important sources of information, and explain why you place your confidence in them. It is part of the introduction to your report. In writing the literature review, your purpose is to convey to your reader what knowledge and ideas have been established on a topic, and what you perceive to be their strengths and weaknesses. As a piece of writing, the literature review must be defined by your project objective. It is not just a descriptive list of the material available or a set of summaries of any published articles. Besides enlarging your knowledge about the topic, writing a literature review lets you gain and demonstrate skills in two areas, namely information seeking and critical appraisal.

**Information seeking:** the ability to scan the literature efficiently, using manual or computerised methods, to identify a set of useful articles and books

**Critical appraisal:** the ability to apply principles of analysis to identify unbiased and valid studies.

A literature review should be organised around and related directly to the project you are developing, it should synthesise results into a summary of what is and is not known, identify areas of controversy in the literature, and it should identify or recommend a best method of approach to solving the project objective.

#### **Methodology**

A detailed description of the work that you performed in planning this project. This should include engineering calculations and other technical information related to the work that will occur during the implementation phase. It may



also include a detailed plan of intended activities and why they are necessary, and a **Gantt chart** for the project implementation phase. It may provide a budget for the project, and an assessment of possible risks and how they will be managed.

### **Results and Discussion (if any)**

**You can add texts here if you have already got some results and discussion, or you have demonstrated use of software (if any) which you will be using in planning project.**

### **Conclusion**

A description of the plan and an account of the problems encountered during the planning phase.

### **References**

#### **Assessment Due Date**

Week 12 Friday (2 June 2017) 11:45 pm AEST

Project Folder

#### **Return Date to Students**

Exam Week Friday (16 June 2017)

Feedback will be provided

### **Weighting**

100%

### **Assessment Criteria**

An Assessment Criteria Sheet and information regarding requirements for each compulsory item is available on the Moodle web site page of this unit. The Assessment Criteria Sheet documents the level of achievement required to achieve "Acceptable", "Good" or "Excellent" ratings for each Learning Outcome. A rubric for awarding grades based on the levels of Acceptable, Good and Excellent is included in the Assessment Criteria sheet.

### **Referencing Style**

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

### **Submission**

Online

### **Submission Instructions**

When saving your assignments for submission on Moodle please ensure you use the suggested file format: example:

John Smith\_S000111\_ENMM20020\_Portfolio.doc

### **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.
- Communicate effectively in formal and informal reports and in professional presentations and project documentation.

### **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