



# ENAG12002 *Engineering Associate Project*

## Term 2 - 2023

Profile information current as at 27/04/2024 04:19 am

All details in this unit profile for ENAG12002 have been officially approved by CQU University and represent a learning partnership between the University and you (our student). The information will not be changed unless absolutely necessary and any change will be clearly indicated by an approved correction included in the profile.

## General Information

### Overview

In this unit, you will apply the knowledge and skills you have developed throughout your Associate Degree to a capstone project. You will manage the project, identify and apply required technical knowledge, develop a project problem definition from a loosely formed client brief and produce detailed drawings and documentation. You will also review the conduct and management of engineering enterprises based on personal work experience and reflect on the engineering design process and project management and their role in it. You will operate in an ethical manner, communicate effectively, and provide evidence of professional conduct and a commitment to lifelong learning. Note: You may make this project part of your compulsory minimum of six weeks of work experience required before graduation.

### Details

Career Level: *Undergraduate*

Unit Level: *Level 2*

Credit Points: *12*

Student Contribution Band: *8*

Fraction of Full-Time Student Load: *0.25*

### Pre-requisites or Co-requisites

Students must have completed 72 credit points.

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 2 - 2023

- Online

### 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 Undergraduate 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: 10%

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

Weighting: 20%

#### 3. **Portfolio**

Weighting: 70%

### 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 Student Unit and Teaching Evaluation

**Feedback**

Individual discussions on the potential project ideas at the start of the term were helpful to develop the project.

**Recommendation**

This practice will be continued.

#### Feedback from Student Unit and Teaching Evaluation

**Feedback**

Online sessions assisted in carrying out the project timely.

**Recommendation**

This practice will be continued.

#### Feedback from Student Unit and Teaching Evaluation

**Feedback**

Discussions on standards and other practices would be desirable.

**Recommendation**

More discussions on the review of relevant standards will be incorporated.

## Unit Learning Outcomes

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

1. Apply and reflect on Engineers Australia's Stage One Competencies for Engineering Associates to the planning and implementation phases of engineering projects
2. Prepare a project scope that includes a project definition, identification of project stakeholders and expected milestones and deliverables
3. Research critical areas of your project and identify the tasks required for the implementation phases, including the application of appropriate technical capability developed in preceding units of study
4. Implement the project plan prepared in the planning phase in consultation with and guidance from your project adviser(s)
5. Prepare professional project documents that convey the processes and outcomes of the project
6. Communicate your project outcomes to project adviser(s), other stakeholders, and the wider community.

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

#### Intermediate

1.2 Procedural-level understanding of the mathematics, numerical analysis, statistics, and computer and information sciences which underpin the practice area. (LO: 3I 5I)

1.4 Discernment of engineering developments within the practice area. (LO: 2I 3I 4I 5I)

#### Advanced

1.1 Descriptive, formula-based understanding of the underpinning natural and physical sciences and the engineering fundamentals applicable to the practice area. (LO: 1A 3A)

1.3 In-depth practical knowledge and skills within specialist sub-disciplines of the practice area. (LO: 2A 3A 4A 5A)

1.5 Knowledge of engineering design practice and contextual factors impacting the practice area. (LO: 2A 3I 4I)

1.6 Understanding of the scope, principles, norms, accountabilities and bounds of sustainable engineering practice in the area of practice. (LO: 2A 3I 4I 5I)

2.1 Application of established technical and practical methods to the solution of well-defined engineering problems. (LO: 1A 3A 4A)

2.2 Application of technical and practical techniques, tools and resources to well-defined engineering problems. (LO: 1A 3I 4A)

2.3 Application of systematic design processes to well-defined engineering problems. (LO: 1A 4I)

2.4 Application of systematic project management processes. (LO: 1A 2A 3A 4A)

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

3.2 Effective oral and written communication in professional and lay domains. (LO: 1A 2A 5A 6A)

3.3 Creative, innovative and pro-active demeanour. (LO: 1A)

3.4 Professional use and management of information. (LO: 1A 4A)

3.5 Orderly management of self, and professional conduct. (LO: 1A 4A)

3.6 Effective team membership and team leadership. (LO: 1A 2I 4I)

*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 Undergraduate Course 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=1511>

## 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 - Communication	•	•	•	•	•	•
2 - Problem Solving		•	•		•	
3 - Critical Thinking	•	•		•	•	
4 - Information Literacy	•	•	•	•	•	•
5 - Team Work						
6 - Information Technology Competence	•	•	•	•	•	•
7 - Cross Cultural Competence			•			
8 - Ethical practice	•				•	
9 - Social Innovation			•			
10 - Aboriginal and Torres Strait Islander Cultures						

## Textbooks and Resources

### Textbooks

**There are no required textbooks.**

### IT Resources

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

- CQUniversity Student Email
- Internet
- Unit Website (Moodle)
- A computer with Windows 7 (or later) operating system and admin rights to install necessary software

## Referencing Style

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

## Teaching Contacts

**Ramadas Narayanan** Unit Coordinator  
[r.narayanan@cqu.edu.au](mailto:r.narayanan@cqu.edu.au)

## Schedule

### Week 1 - 10 Jul 2023

Module/Topic	Chapter	Events and Submissions/Topic
Zoom Collaborate Session - 1. Introduction to the unit 2. Overview of Engineering Projects 3. Developing Project aim and Objectives 4. Expectations - Are you biting off more than you can chew? 5. Identify any IP/Confidentiality issues	Refer to Lecture Slides and information in Week 1 block in unit Moodle site	Event 1 (E1): Read the unit profile thoroughly and understand what is required of you to successfully complete this unit. E2: Consider the type of project work you need to undertake to achieve the learning outcomes of this unit. E3: Begin preliminary project proposal

### Week 2 - 17 Jul 2023

Module/Topic	Chapter	Events and Submissions/Topic
Zoom Collaborate Session 1. Tips to conducting literature reviews 2. Project Methodology - Exploring the options 3. Work Breakdown Structure 4. Project Planning - The Timeline	Refer to Lecture Slides and information in Week 2 block in unit Moodle site	E3 (cont): Develop a project proposal and spell out the project aim and objectives and expected outcomes. E4: Have you considered the resources you need to carry out the project? E5: Identify any IP/Confidentiality issues in your project. Get all parties to sign Non-Disclosure Agreements where applicable. Where applicable, all NDAs have to signed by relevant stakeholders before the transmission/sharing of any sensitive information. A copy of the NDA can be downloaded via the Unit Moodle site.

### Week 3 - 24 Jul 2023

Module/Topic	Chapter	Events and Submissions/Topic
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Zoom Collaborate Session  
Project work commences  
Literature Review  
• Information Retrieval & Processing

Refer to Lecture Slides and information in Week 3 block in unit Moodle site

E6: Develop a justification for the proposed methodology  
• Develop Project Methodology  
• Estimate the resources you need  
• Engineering/technical skills audit  
E7: Analyse the engineering/technical skills you need to apply to realize your project objectives

**Project Proposal** Due: Week 3 Friday (28 July 2023) 5:00 pm AEST

#### Week 4 - 31 Jul 2023

Module/Topic	Chapter	Events and Submissions/Topic
Literature Review continues Project work continues		E8: Commence developing Chapter 2 Literature Review. Depending on your project topic and scope, this chapter can be anything from 10 to 25 pages. E9: Get a grip on citation and referencing styles. Harvard style is preferred.

#### Week 5 - 07 Aug 2023

Module/Topic	Chapter	Events and Submissions/Topic
Literature Review continues Project work continues		E10: Revise/review the proposed Project Methodology you will use in your project. This will constitute Chapter 3 of your project report.

#### Vacation Week - 14 Aug 2023

Module/Topic	Chapter	Events and Submissions/Topic
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#### Week 6 - 21 Aug 2023

Module/Topic	Chapter	Events and Submissions/Topic
Project work continues		<b>Literature Review and Project Methodology</b> Due: Week 6 Friday (25 Aug 2023) 5:00 pm AEST

#### Week 7 - 28 Aug 2023

Module/Topic	Chapter	Events and Submissions/Topic
Project work continues		

#### Week 8 - 04 Sep 2023

Module/Topic	Chapter	Events and Submissions/Topic
Project work continues		

#### Week 9 - 11 Sep 2023

Module/Topic	Chapter	Events and Submissions/Topic
Project work continues		

Week 10 - 18 Sep 2023		
Module/Topic	Chapter	Events and Submissions/Topic
Project work continues		
Week 11 - 25 Sep 2023		
Module/Topic	Chapter	Events and Submissions/Topic
Portfolio finalization commences		
Week 12 - 02 Oct 2023		
Module/Topic	Chapter	Events and Submissions/Topic
Portfolio finalization		
Review/Exam Week - 09 Oct 2023		
Module/Topic	Chapter	Events and Submissions/Topic
Submit Portfolio		<b>Portfolio</b> Due: Review/Exam Week Friday (13 Oct 2023) 5:00 pm AEST
1. Project Report		
2. Video Presentation		
3. Reflective report		
Exam Week - 16 Oct 2023		
Module/Topic	Chapter	Events and Submissions/Topic

## Assessment Tasks

### 1 Project Proposal

#### Assessment Type

Written Assessment

#### Task Description

You must submit a project proposal following the format provided on Moodle. You must include project title, background, rationale, aims & objectives, duration, EA competencies, preliminary budget, stakeholders and resources required for the project.

#### Assessment Due Date

Week 3 Friday (28 July 2023) 5:00 pm AEST

#### Return Date to Students

Week 5 Friday (11 Aug 2023)

Two weeks after submission.

#### Weighting

10%

#### Minimum mark or grade

50%

#### Assessment Criteria

A marking rubric is provided on Moodle that includes indicators of attainment at the 'Sound', 'Good' and 'Excellent' levels for all aspects of the assignment such as the project title, background, rationale, aims & objectives, duration, EA competencies, preliminary budget, and stakeholders and resources.

#### Referencing Style

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

#### Submission

Online

#### Learning Outcomes Assessed

- Prepare a project scope that includes a project definition, identification of project stakeholders and expected



milestones and deliverables

## 2 Literature Review and Project Methodology

### Assessment Type

Written Assessment

### Task Description

Prepare a literature review and project methodology suitable for your project in consultation with project stakeholders. Check Moodle for further guidance, especially the CQU Library guide for Literature Reviews.

### Assessment Due Date

Week 6 Friday (25 Aug 2023) 5:00 pm AEST

### Return Date to Students

Week 8 Friday (8 Sept 2023)

Two weeks after the submission

### Weighting

20%

### Minimum mark or grade

50%

### Assessment Criteria

This assessment will be marked on the criteria such as accuracy and clarity of written document, quality, quantity and reliability of references used for literature review, reliability of information, and appropriateness of project methodology. Performance guidelines for the assessment criteria will be available in Moodle

### Referencing Style

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

### Submission

Online

### Learning Outcomes Assessed

- Research critical areas of your project and identify the tasks required for the implementation phases, including the application of appropriate technical capability developed in preceding units of study

## 3 Portfolio

### Assessment Type

Portfolio

### Task Description

Your Portfolio will comprise the following compulsory items in this unit:

1. Project Report
2. Video Presentation
3. Reflective paper on your attainment Engineers Australia Stage 1 Competencies for Engineering Associate

Please refer to the unit Moodle site for detailed information on the above submissions.

### Assessment Due Date

Review/Exam Week Friday (13 Oct 2023) 5:00 pm AEST

### Return Date to Students

Exam Week Friday (20 Oct 2023)

Two weeks after the submission

### Weighting

70%

### Minimum mark or grade

50%

### Assessment Criteria

The following assessment criteria shall apply (refer to the unit Moodle site for a comprehensive guide to

the assessment criteria):

1. Project Report (50% Weighting) - the report captures all the elements of the work that has been undertaken during the term. It is presented in the prescribed format and follows all relevant guidelines as stipulated in the Assessment Criteria Document on the unit Moodle site.
2. Video Presentation (10% Weighting) - The video must summarize the project work - aims & objectives, approach and methodology, main results and outcomes achieved.
3. Reflective report (10% Weighting) - The report must describe how you have attained Engineers Australia Stage 1 Competencies for Engineering Associate.

Refer to the Unit Moodle site for more details about the Assessment Criteria.

### **Referencing Style**

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

### **Submission**

Online

### **Learning Outcomes Assessed**

- Apply and reflect on Engineers Australia's Stage One Competencies for Engineering Associates to the planning and implementation phases of engineering projects
- Prepare a project scope that includes a project definition, identification of project stakeholders and expected milestones and deliverables
- Research critical areas of your project and identify the tasks required for the implementation phases, including the application of appropriate technical capability developed in preceding units of study
- Implement the project plan prepared in the planning phase in consultation with and guidance from your project adviser(s)
- Prepare professional project documents that convey the processes and outcomes of the project
- Communicate your project outcomes to project adviser(s), other stakeholders, and the wider community.

## 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