



# ENEG12007 *Design and Project Management*

## Term 1 - 2017

Profile information current as at 16/05/2024 01:51 pm

All details in this unit profile for ENEG12007 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

In this unit, you will consult with stakeholders, generate design ideas as a member of a design team, manage the development of a functional prototype and fine-tune the prototype based on stakeholder feedback. You will pitch and demonstrate your design idea to an audience of peers and industry. You will apply relevant fundamental discipline knowledge and skills as well as project management principles.

### Details

Career Level: *Undergraduate*

Unit Level: *Level 2*

Credit Points: 6

Student Contribution Band: 8

Fraction of Full-Time Student Load: 0.125

### Pre-requisites or Co-requisites

Prerequisites: (ENEG11007 Engineering Industry Project Investigation OR ENEG11002 Engineering Skills 2) AND (ENEG11006 Engineering Statics OR ENEG11009 Fundamentals of Energy and Electricity OR PHYS11184 Engineering Physics A OR PHYS11185 Engineering Physics B) AND MATH11218 Applied Mathematics AND ENEG11008 Materials for Engineers

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

- Bundaberg
- Cairns
- Distance
- Gladstone
- Mackay
- 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 6-credit Undergraduate unit at CQUniversity requires an overall time commitment of an average of 12.5 hours of study per week, making a total of 150 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: 10%

#### 3. **Portfolio**

Weighting: 40%

#### 4. **Presentation and 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 Coordinator self reflection

**Feedback**

Additional resources should be provided on specific topics related to the assessment and project outcomes.

**Recommendation**

Additional information will be provided on topics such as budget, risk assessment, alternative solution generation and intellectual property.

**Action**

The addition of the Oberlender text resulted in better resources for budgeting and risk management and the Kelley text covered alternative solution generation. However, I did not end up having anything for IP which would have been good.

#### Feedback from Coordinator self reflection

**Feedback**

In order to improve the emphasis on entrepreneurship, it would be good to have input from a variety of people to share their experiences.

**Recommendation**

Guest lectures will be included.

**Action**

A number of guest lectures were included this year and they were well received by students.

#### Feedback from Student feedback

**Feedback**

Some students felt there was little new content in this course.

**Recommendation**

The textbooks will be changed and specific reflective tasks clearly linked to the learning outcomes will be added.

**Action**

The addition of the new textbooks and the reflective tasks directly linked to the learning outcomes worked well.

#### Feedback from Student feedback

**Feedback**

Many students enjoyed the autonomy of being able to choose their own project.

**Recommendation**

The focus of this course is to encourage creative design and entrepreneurship. Allowing students to choose their own project will be maintained.

**Action**

The addition of the Creative Confidence text really enhanced this aspect of the unit.

## Unit Learning Outcomes

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

1. Develop a design specification by observing and interviewing potential users or clients
2. Apply the techniques of project management in order to create a functional design prototype in a short timeline
3. Generate design ideas by investigating current practice and using creativity tools
4. Produce a design prototype using relevant fundamental discipline knowledge and skills including sustainability principles and Australian Standards
5. Produce a design prototype based on stakeholder feedback
6. Communicate and demonstrate a design idea as part of a team
7. Work proactively and be professionally accountable in a team.
8. Reflect on the creative design and project management process.

Learning outcomes are linked to Engineers Australia Stage 1 Competencies and also discipline capabilities. You can find the mapping for this on the [Engineering Undergraduate Course website](#).

## 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	7	8
<b>1 - Written Assessment - 10%</b>	•		•					
<b>2 - Written Assessment - 10%</b>		•						
<b>3 - Portfolio - 40%</b>	•	•	•	•	•	•	•	•
<b>4 - Presentation and Written Assessment - 40%</b>	•			•	•	•		

### Alignment of Graduate Attributes to Learning Outcomes

Graduate Attributes	Learning Outcomes							
	1	2	3	4	5	6	7	8
<b>1 - Communication</b>	•					•		•
<b>2 - Problem Solving</b>	•	•	•	•	•			
<b>3 - Critical Thinking</b>	•	•	•	•	•			
<b>4 - Information Literacy</b>			•	•				
<b>5 - Team Work</b>							•	
<b>6 - Information Technology Competence</b>				•				

Graduate Attributes	Learning Outcomes							
	1	2	3	4	5	6	7	8
7 - Cross Cultural Competence	•							
8 - Ethical practice	•					•	•	
9 - Social Innovation								
10 - 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	9	10
1 - Written Assessment - 10%	•	•	•				•			
2 - Written Assessment - 10%	•	•	•							
3 - Portfolio - 40%	•	•	•	•	•	•		•		
4 - Presentation and Written Assessment - 40%	•	•	•	•	•	•		•		

## Textbooks and Resources

### Textbooks

ENEG12007

#### Prescribed

**Creative confidence: Unleashing the creative potential within us all**  
(2013)

Authors: Kelley, T. and Kelley, D.

Crown Business

New York , USA

Binding: Hardcover

ENEG12007

#### Prescribed

**Project management for engineering and construction**

Third edition (2014)

Authors: Oberlender, G.

McGraw-Hill Education

USA

Binding: Hardcover

#### Additional Textbook Information

Both of the textbooks are available in e-copy.

[View textbooks at the CQUniversity Bookshop](#)

### IT Resources

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

- CQUniversity Student Email
- Internet
- Unit Website (Moodle)
- Modelling software specific to project
- MS Project

## Referencing Style

All submissions for this unit must use the referencing style: [Harvard \(author-date\)](#)

For further information, see the Assessment Tasks.

## Teaching Contacts

**Fae Martin** Unit Coordinator

[f.martin@cqu.edu.au](mailto:f.martin@cqu.edu.au)

## Schedule

### Week 1 - 06 Mar 2017

Module/Topic	Chapter	Events and Submissions/Topic
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Where do design ideas come from?	Kelley & Kelley: <ul style="list-style-type: none"> <li>• Introduction: The Heart of innovation</li> <li>• Chapter 1: Flip - From design thinking to creative confidence</li> <li>• Chapter 2: Dare - From fear to courage</li> </ul> Oberlender: <ul style="list-style-type: none"> <li>• Chapter 3: Project initiation</li> </ul>	Work on Design Idea.
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## Week 2 - 13 Mar 2017

Module/Topic	Chapter	Events and Submissions/Topic
How will you and your team work?	Kelley & Kelley: <ul style="list-style-type: none"> <li>• Chapter 3: Spark - From blank page to</li> </ul> Oberlender: <ul style="list-style-type: none"> <li>• Chapter 4: Early estimates</li> <li>• Chapter 5: Project budgeting</li> </ul>	Students to post Design Ideas on Team Creation Forum to attract team members to their idea  <b>The Design Idea Due:</b> Week 2 Friday (17 Mar 2017) 4:00 pm AEST

## Week 3 - 20 Mar 2017

Module/Topic	Chapter	Events and Submissions/Topic
Project management - what's important?	Kelley & Kelley: <ul style="list-style-type: none"> <li>• No reading this week</li> </ul> Oberlender: <ul style="list-style-type: none"> <li>• Chapter 6: Development of work plan</li> <li>• Chapter 14 Risk management</li> </ul>	Teams work on Project Charter and project plan.

## Week 4 - 27 Mar 2017

Module/Topic	Chapter	Events and Submissions/Topic
What problem are you trying to solve?	Kelley & Kelley: <ul style="list-style-type: none"> <li>• No reading this week</li> </ul> Oberlender: <ul style="list-style-type: none"> <li>• Chapter 8: Project scheduling</li> </ul>	Teams work on understanding and defining the problem. Teams work on finalising the Project Charter and project plan.  <b>Project charter including detailed project plan Due:</b> Week 4 Friday (31 Mar 2017) 4:00 pm AEST

## Week 5 - 03 Apr 2017

Module/Topic	Chapter	Events and Submissions/Topic
Generating solutions - how and why?	Kelley & Kelley: <ul style="list-style-type: none"> <li>• Chapter 7: Move - Creative confidence to go</li> </ul> Oberlender: <ul style="list-style-type: none"> <li>• Chapter 9: Tracking work</li> </ul>	Teams work on generating potential solutions.

## 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
You, your team and your project - how are they performing?	Kelley & Kelley: <ul style="list-style-type: none"> <li>• Chapter 6: Team - Creatively confident groups</li> </ul> Oberlender: <ul style="list-style-type: none"> <li>• Chapter 2: Working with project teams</li> </ul>	Teams continue to generate potential solutions.

## Week 7 - 24 Apr 2017

Module/Topic	Chapter	Events and Submissions/Topic
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How will you decide which solution you want to pursue?	Kelley & Kelley: • Chapter 5: Seek - From duty to passion Oberlender: • Chapter 7: Design proposals • Chapter 10: Design coordination	Teams evaluate solutions.
<b>Week 8 - 01 May 2017</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>
What type of design prototype will you generate and how?	Kelley & Kelley: • Chapter 4: Leap - From planning to action Oberlender: • Chapter 11: Construction phase	Teams decide on the type of design prototype that they will generate and how they will go about producing the prototype.
<b>Week 9 - 08 May 2017</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>
Iteration, iteration, iteration... ?	Kelley & Kelley: • Chapter 8: Next - Embrace creative confidence Oberlender: • Chapter 12: Project close out	Teams produce their prototype and start collecting feedback from users/ stakeholders.  <b>Portfolio Due:</b> Week 9 Friday (12 May 2017) 4:00 pm AEST
<b>Week 10 - 15 May 2017</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>
What is the best way to communicate your design outcome?	No further readings	Teams continue to refine their prototype and start to consider how they will communicate the design outcome.
<b>Week 11 - 22 May 2017</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>
Are you ready to close it out?		Teams continue to refine their prototype and work on their report and presentation.
<b>Week 12 - 29 May 2017</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>
The end... or is it?		Teams finalise their report and presentation.  <b>Presentation and Written Assessment Due:</b> Week 12 Friday (2 June 2017) 4:00 pm AEST
<b>Review/Exam Week - 05 Jun 2017</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>
<b>Exam Week - 12 Jun 2017</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>

## Assessment Tasks

### 1 The Design Idea

#### Assessment Type

Written Assessment

#### Task Description

This is a 1 page submission. A template is provided on the Course Website. You must provide a statement of the design



problem and identify the stakeholders in the design. The submission will also include a statement of the human resources and physical resources that you anticipate will be required in order to generate a feasible design and a design prototype. This submission may be done either individually or as a team of 2. In order to give teams as much time as possible to work on their design, it is essential that the team formation process is completed as quickly as possible. For this reason, although the formal submission of this item is due at the end of Week 2, you are encouraged to post your Design Idea to the Team Formation Forum as early as possible to attract team members to your project.

**Assessment Due Date**

Week 2 Friday (17 Mar 2017) 4:00 pm AEST

**Return Date to Students**

Week 3 Wednesday (22 Mar 2017)

**Weighting**

10%

**Assessment Criteria**

The Design Idea must benefit people and not be intended to harm anyone or anything. Any Ideas that are intended to cause harm will receive 0 marks.

The statement of the design idea should be written using clear language and the need, opportunity and context for the problem should be identified.

Design stakeholders should be identified.

Human resources required, including the skills required, should be identified. This will assist in team formation as the team should be formed from people with appropriate skills.

Physical resources that may be required should also be identified, though these may change as the design problem is more clearly defined.

Further information about this assessment item is available on the Course website.

**Referencing Style**

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

**Submission**

Online

**Submission Instructions**

Individual submissions or submissions as a team of 2 are acceptable. If you are submitting as a team of 2, ensure that both your names are listed on the submission and you should BOTH submit. You will both get the same mark.

**Learning Outcomes Assessed**

- Develop a design specification by observing and interviewing potential users or clients
- Generate design ideas by investigating current practice and using creativity tools

**Graduate Attributes**

- Communication
- Problem Solving
- Critical Thinking
- Cross Cultural Competence

## 2 Project charter including detailed project plan

**Assessment Type**

Written Assessment

**Task Description**

This is a team submission.

Your team will develop a Project Charter for the design. A template for the Project Charter is available on the Course Website. You will need to include information such as the reason for the project, project goal(s), scope, milestones/deliverables, risks and communications plan.

Your team must also develop a detailed project plan which identifies the tasks you need to complete, deadlines, timeframes, sequencing and human and physical resources.

**Assessment Due Date**

Week 4 Friday (31 Mar 2017) 4:00 pm AEST

**Return Date to Students**

Week 5 Wednesday (5 Apr 2017)

## Weighting

10%

### Minimum mark or grade

You must meet the Minimum requirements for this assessment item in order to be eligible for a passing grade for this course. Information on the Minimum requirements is available in the detailed Assessment Criteria for this assessment item.

### Assessment Criteria

The Project Charter will include information on the budget, constraints, goal, scope, deliverables, risks and communication plan for the project.

The detailed project plan will have the project broken down into tasks, will show deadlines, have realistic timeframes allocated to tasks and have the tasks sequenced. Human and physical resources must be considered. Risks to successful project completion must be identified. A Gantt chart will form part of this submission.

Detailed Assessment Criteria for this assessment item is available on the Course Website.

### Referencing Style

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

### Submission

Online

### Submission Instructions

This is a team submission. You must list all members of your team on your submission. Only 1 member of your team needs to submit this item. Please submit as a single pdf file.

### Learning Outcomes Assessed

- Apply the techniques of project management in order to create a functional design prototype in a short timeline

### Graduate Attributes

- Communication
- Problem Solving
- Critical Thinking

## 3 Portfolio

### Assessment Type

Portfolio

### Task Description

The Portfolio is an **individual submission** that allows you to demonstrate your achievement of the Learning Outcomes for the course.

You will provide evidence from your project work, team work and class activities to demonstrate your achievement of the Learning Outcomes. It is recognised that there may be some Learning Outcomes which you are still in process of achieving since this assessment item is due prior to the end of term.

As a guideline, the **main body** of your Portfolio should be no more than 2500 words.

There is further information available on the Course Website about this assessment item.

### Assessment Due Date

Week 9 Friday (12 May 2017) 4:00 pm AEST

### Return Date to Students

Within 2 weeks

## Weighting

40%

### Minimum mark or grade

You must meet the Minimum requirements for this assessment item in order to be eligible for a passing grade for this course. Information on the Minimum requirements is available in the detailed Assessment Criteria available on the Course website.

### Assessment Criteria

A detailed Assessment Criteria for this submission is available on the Course Website.

At the beginning of Term, it is important that you familiarise yourself with the evidence you need to collect so that you can be collecting the required evidence as you work through the design process. You will require evidence such as minutes of team meetings, personal research for the project, notes/ photographs of participation in activities, evidence of personal design ideas such as sketches/ emails, evidence of working on a prototype, draft layout of team report and

evidence of regular communication with your team. Some evidence will be related to the Tasks you will complete each week.

Make sure you read the detailed Assessment Criteria on the Course Website.

### Referencing Style

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

### Submission

Online

### Learning Outcomes Assessed

- Develop a design specification by observing and interviewing potential users or clients
- Apply the techniques of project management in order to create a functional design prototype in a short timeline
- Generate design ideas by investigating current practice and using creativity tools
- Produce a design prototype using relevant fundamental discipline knowledge and skills including sustainability principles and Australian Standards
- Produce a design prototype based on stakeholder feedback
- Communicate and demonstrate a design idea as part of a team
- Work proactively and be professionally accountable in a team.
- Reflect on the creative design and project management process.

### Graduate Attributes

- Communication
- Problem Solving
- Critical Thinking
- Information Literacy
- Team Work
- Information Technology Competence
- Ethical practice

## 4 Presentation and Written Assessment

### Assessment Type

Presentation and Written Assessment

### Task Description

This is a team report and team presentation.

The intended audience for the report and presentation is either a potential investor or a group of executives at your company. You are trying to convince them that your design is worthy of further development and investment. In order to do that, you will need to convince them that you have identified a need and have defined the problem, that you have carried out extensive research and understand the current state of the art, that you have developed an understanding of user/ stakeholder needs, that you have investigated several possible solutions and chosen the best solution based on transparent criteria and that you have refined your design based on stakeholder feedback.

In other words, you have used the engineering design process and exhibited engineering judgement.

This is NOT intended to be a sales pitch with no substance. Convince your audience that you know your subject and that you have designed something that is feasible, based on solid engineering fundamentals, and will improve the life of the user.

### Assessment Due Date

Week 12 Friday (2 June 2017) 4:00 pm AEST

Note that the Presentation may occur earlier in Week 12. Date and time of the presentation will be communicated via the Course Website by the end of Week 10.

### Return Date to Students

Within 2 weeks

### Weighting

40%

### Minimum mark or grade

You must meet the Minimum requirements for this assessment item in order to be eligible for a passing grade for this course. Information on the Minimum requirements is available in the detailed Assessment Criteria for this assessment item.

### Assessment Criteria

The Report should be concise and professional. The **body of the report** should be **no more than 10 pages**, the report

should be appropriately structured and there should be no major spelling or grammar issues. The report must be appropriately referenced and the design as presented must be feasible.

The Presentation should be professional with team members appropriately dressed and behaving in a professional manner throughout. The team should convince the audience of the need for the design and that they understand user/stakeholder requirements.

There is a detailed Assessment Criteria available for this assessment item on the Course Website.

### **Referencing Style**

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

### **Submission**

Online

### **Submission Instructions**

All teams will present their design in real time. Distance students will participate via video-conference. Reports must have the name of all team members on the Title Page. Only 1 team member needs to submit the Report.

### **Learning Outcomes Assessed**

- Develop a design specification by observing and interviewing potential users or clients
- Produce a design prototype using relevant fundamental discipline knowledge and skills including sustainability principles and Australian Standards
- Produce a design prototype based on stakeholder feedback
- Communicate and demonstrate a design idea as part of a team

### **Graduate Attributes**

- Communication
- Problem Solving
- Critical Thinking
- Information Literacy
- Team Work
- Information Technology Competence
- Ethical practice

## 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