



ENEG12007 Design and Project Management

Term 1 - 2019

Profile information current as at 26/04/2024 03:10 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

Generating creative design project ideas, pitching a project proposal, assembling a design team, developing a comprehensive project plan and undertaking a project are all vital skills that enable engineers to establish work opportunities. This unit takes you through the creative process of developing a prototype for an innovative design. You will consult with stakeholders, generate design ideas and as a member of a small design team, manage the development of a functional prototype and fine-tune the prototype based on stakeholder feedback. You will pitch and demonstrate your prototype to an audience of peers and industry. You will apply relevant fundamental discipline knowledge and skills as well as project management principles. Completing this unit will enable you to hone skills exhibited by productive entrepreneurial engineers.

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 - 2019

- Bundaberg
- Cairns
- Gladstone
- Mackay
- Online
- 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: 20%

2. **Written Assessment**

Weighting: 20%

3. **Written Assessment**

Weighting: 30%

4. **Portfolio**

Weighting: 30%

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 evaluations

Feedback

Students enjoyed having the opportunity to propose any project they could think of.

Recommendation

Continue to develop students creative confidence and skills in pitching project ideas to ensure attractive projects are undertaken.

Feedback from Staff and student evaluations

Feedback

Students enjoyed making the rapid prototypes but not everyone understood the value of using the prototypes to obtain feedback from stakeholders to improve their design.

Recommendation

Continue to encourage students to learn how to improve their design ideas through rapid prototyping specifically for seeking feedback from stakeholders.

Feedback from Student evaluations

Feedback

More timely release of resources that supported assessment tasks.

Recommendation

All assessment instructions and resources should be finalised and uploaded to Moodle in the first weeks of term.

Feedback from Student evaluations

Feedback

Textbooks were useful but underutilized in the current unit design.

Recommendation

Consider revising the textbooks and increasing set activities to scaffold skills development and completion of assessments.

Feedback from Staff

Feedback

Focus more on creative design and rapid prototyping by relocating project management curriculum to earlier units

Recommendation

Project management skills could be taught in earlier units to allow this unit to have a greater emphasis on why engineers must develop creative design and rapid prototyping skills.

Feedback from Staff and student evaluation

Feedback

Provide more learning resources to help students progress through the creative design process and develop such skills.

Recommendation

Create a creative design resources toolbox which is applied to complete set activities that assist students to progress through the creative design process with their team project.

Unit Learning Outcomes

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

1. Pitch a design idea that proposes to investigate opportunities for improvement, solve a problem or produce a new product
2. Develop a design specification by incorporating relevant Australian Standards and gathering information from potential users or clients
3. Produce a functional prototype by applying project management skills, stakeholder feedback, relevant discipline knowledge, and the principles of sustainable development
4. Communicate effectively, work productively, and be professionally accountable as part of a design team
5. Reflect on the processes of creative design, project management, and prototype production.

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
1 - Written Assessment - 20%	•				
2 - Written Assessment - 20%		•			
3 - Written Assessment - 30%			•	•	
4 - Portfolio - 30%		•	•	•	•

Alignment of Graduate Attributes to Learning Outcomes

Graduate Attributes	Learning Outcomes				
	1	2	3	4	5
1 - Communication		•	•	•	•
2 - Problem Solving	•	•	•		•
3 - Critical Thinking	•	•	•		•
4 - Information Literacy	•				
5 - Team Work		•	•	•	
6 - Information Technology Competence					
7 - Cross Cultural Competence		•			

Graduate Attributes	Learning Outcomes				
	1	2	3	4	5
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 - 20%	•	•	•				•	•		
2 - Written Assessment - 20%	•	•	•		•			•		
3 - Written Assessment - 30%	•	•	•	•	•	•		•		
4 - Portfolio - 30%	•	•	•	•	•	•		•		

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

Copies are available to purchase from the CQUni Bookshop here: <http://bookshop.cqu.edu.au> (search on the Unit code)

[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

Benjamin Taylor Unit Coordinator

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Schedule

Week 1 - Bringing back creative design to engineering - 11 Mar 2019

Module/Topic	Chapter	Events and Submissions/Topic
Lecture: The rationale for creative design and project management	Textbook: Oberlender Chapter 2 [pp.21-40]	

Week 2 - Working with people in project management - 18 Mar 2019

Module/Topic	Chapter	Events and Submissions/Topic
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Lecture: Project management - Who's important
Textbook: Oberlender Chapter 1 [pp.1-20]
Portfolio Due task on Moodle

Week 3 - The principles of project management - 25 Mar 2019

Module/Topic	Chapter	Events and Submissions/Topic
Lecture: Project management - What's important	Textbook: Oberlender Chapter 6 [pp.139-152]	Portfolio Due task on Moodle

Week 4 - Developing creative confidence - 01 Apr 2019

Module/Topic	Chapter	Events and Submissions/Topic
Lecture: The EWB Design Summit	Textbook: Oberlender Chapter 13 [pp.347-364]	Portfolio Due task on Moodle

Week 5 - Daring to be creative - 08 Apr 2019

Module/Topic	Chapter	Events and Submissions/Topic
Lecture: Ideating techniques	Textbook: Kelley & Kelley Chapter 1 Flip [pp.37-42]	Portfolio Due task on Moodle

Vacation Week - 15 Apr 2019

Module/Topic	Chapter	Events and Submissions/Topic
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Week 6 - Accepting that we do not know everything - 22 Apr 2019

Module/Topic	Chapter	Events and Submissions/Topic
Lecture: Enhanced design through consultation	Textbook: Kelley & Kelley Chapter 3 Spark [pp.85-107]	Individual Design Idea Due: Week 6 Friday (26 Apr 2019) 10:00 pm AEST

Week 7 - Setting targets through design specifications - 29 Apr 2019

Module/Topic	Chapter	Events and Submissions/Topic
Lecture: Design specifications explained	Textbook: Kelley & Kelley: Chapter 4 Leap [pp.109-115]	

Week 8 - Seeking the answers and questions we don't know - 06 May 2019

Module/Topic	Chapter	Events and Submissions/Topic
Lecture: Seeking constructive feedback	Textbook: Kelley & Kelley: Chapter 4 Leap [pp.116-129]	Design Project Specifications Due: Week 8 Friday (10 May 2019) 10:00 pm AEST

Week 9 - Prototyping for a reason - 13 May 2019

Module/Topic	Chapter	Events and Submissions/Topic
Lecture: Prototypes with impact	Textbook: Kelley & Kelley: Chapter 4 Leap [pp.130-147]	

Week 10 - Examples of product development - 20 May 2019

Module/Topic	Chapter	Events and Submissions/Topic
Lecture: Guest lecture (TBA and subject to availability)		Design Evolution Report Due: Week 10 Friday (24 May 2019) 10:00 pm AEST

Week 11 - Design Showcase preparation - 27 May 2019

Module/Topic	Chapter	Events and Submissions/Topic
Lecture: Unit reflection	Moodle: Online examples of design presentations.	

Week 12 - Design evolution presentation - 02 Jun 2019

Module/Topic	Chapter	Events and Submissions/Topic
Lecture: Students shared experiences	Textbook: Kelley & Kelley: Chapter 8 Next [pp.245-256]	Design Evolution Presentation Due: at the Engineering Project Showcase Wednesday, June 5 (Schedule published on Moodle).

Review/Exam Week - 10 Jun 2019

Module/Topic	Chapter	Events and Submissions/Topic
		Portfolio of Learning Achievements Due: Review/Exam Week Tuesday (11 June 2019) 10:00 pm AEST

Exam Week - 17 Jun 2019

Module/Topic	Chapter	Events and Submissions/Topic
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