ENEG12007 *Design and Project Management*
Term 1 - 2018

Profile information current as at 16/05/2024 01:38 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 - 2018

- 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: 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 Engineers Australia 2016 accreditation panel

Feedback
Students should engage in basic design and build activities.

Recommendation
Ensure all teams build a physical prototype.

Feedback from Student feedback

Feedback
Teaching of MS Project should be more structured.

Recommendation
Include a lecture and practice exercises for MS Project.

Feedback from Student feedback

Feedback
Some students really appreciated the opportunity of choosing their own project but some do not understand why they are being asked to seek their own project.

Recommendation
In the first lecture, explain why students are being asked to seek their own project ideas in terms of the changing environment of engineering work and the Engineers Australia Stage 1 Competencies, particularly 3.3.

Feedback from Student feedback

Feedback
The guest lectures were good. Some could have been a bit more focused on the unit content.

Recommendation
Continue including guest lectures but provide guest lecturers with more guidance regarding lecture content.

Feedback from Student feedback

Feedback
Individual contribution to team project should be justified.

Recommendation
Team project report to include a statement which describes each individual's contribution to the 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		•			
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%	•	•	•				•	•		

Assessment Tasks	Graduate Attributes									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
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
Both of the textbooks are available in e-copy.

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
ben.taylor@cqu.edu.au

Schedule

Week 1 - 05 Mar 2018

Module/Topic	Chapter	Events and Submissions/Topic
Develop - creative confidence **Workshop**: Exploring your creative past **Lecture**: Ideation Techniques *(Due to scheduling of lectures on Fridays, topics will relate to the following week)*	Kelley & Kelley: Chapter 2 Dare [pp.37-42]	

Week 2 - 12 Mar 2018

Module/Topic	Chapter	Events and Submissions/Topic
Ideate - practice your skills **Workshop**: Divergent thinking **Lecture**: Guest Lecture EWB Design Summit (Subject to availability)	Kelley & Kelley: Chapter 3 Spark [pp.67-75]	

Week 3 - 19 Mar 2018

Module/Topic	Chapter	Events and Submissions/Topic
Pitch - put your best idea forward **Workshop**: 3 minute pitch **Lecture**: Project Management - Who's important	Oberlender: Chapter 7 [pp.139-152]	**Individual Design Idea** Due: Week 3 Friday (23 Mar 2018) 10:00 pm AEST

Week 4 - 26 Mar 2018

Module/Topic	Chapter	Events and Submissions/Topic
Create - team, project scope and Charter **Workshop**: Team Creation **Lecture**: Project Management - What's important	Kelley & Kelly: Chapter 6 Team [pp.182-191] & Oberlender: Chapter 1 [pp.1-8]	

Week 5 - 02 Apr 2018

Module/Topic	Chapter	Events and Submissions/Topic
Plan - Project Management **Workshop**: Creating a Project Plan **Lecture**: Design Specifications Explained	Oberlender: Chapter 6 [pp.115-137]	**Design Project Plan** Due: Week 5 Friday (6 Apr 2018) 10:00 pm AEST

Vacation Week - 09 Apr 2018

Module/Topic	Chapter	Events and Submissions/Topic

Week 6 - 16 Apr 2018

Module/Topic	Chapter	Events and Submissions/Topic
Research - learn from others **Workshop**: Initial Desired Solution **Lecture**: Enhanced Design Through Consultation	Oberlender: Chapter 10 [pp.285-304]	Self and Peer-Assessment (SPA) 1 Due: Week 6 Friday (20 April 2018) 10:00 PM AEST

Week 7 - 23 Apr 2018

Module/Topic	Chapter	Events and Submissions/Topic
Consult - engage your stakeholders **Workshop**: Expanded Desired Solution **Lecture**: Guest Lecture (TBA & subject to availability)	Kelley & Kelley: Chapter 4 Leap [pp.109-115]	

Week 8 - 30 Apr 2018

Module/Topic	Chapter	Events and Submissions/Topic

| Iterate - good design to great design
Workshop: Diverge to Converge
Lecture: Prototypes With Impact | Kelley & Kelley: Chapter 4 Leap [pp.115-129] | |

Week 9 - 07 May 2018

Module/Topic	Chapter	Events and Submissions/Topic
Prototype - idea realised **Workshop**: Fabrication **Lecture**: Seeking Constructive Feedback	Kelley & Kelley: Chapter 4 Leap [pp.130-147]	

Week 10 - 14 May 2018

Module/Topic	Chapter	Events and Submissions/Topic
Solicit - seek feedback **Workshop**: Presentation to Stakeholders **Lecture**: Guest Lecture (TBA and subject to availability)	Kelley & Kelley: Chapter 3 Spark [pp.85-107]	

Week 11 - 21 May 2018

Module/Topic	Chapter	Events and Submissions/Topic
Finalise - refine and report **Workshop**: Final touches **Lecture**: Unit Reflection	Kelley & Kelley: Chapter 5 Seek [pp.149-173]	Self and Peer-Assessment (SPA) 2 Due: Week 11 Friday (25 May 2018) 10:00 PM AEST **Team Report and Presentation** Due: Week 11 Friday (25 May 2018) 10:00 pm AEST

Week 12 - 28 May 2018

Module/Topic	Chapter	Events and Submissions/Topic
Reflect - how can you improve **Workshop**: Project Presentation No lecture in Week 12	Kelley & Kelley: Chapter 8 Next [pp.245-256]	Teams must present their project together with final-year thesis presentations.

Review/Exam Week - 04 Jun 2018

Module/Topic	Chapter	Events and Submissions/Topic
		Portfolio of Learning Achievements Due: Review/Exam Week Monday (4 June 2018) 10:00 pm AEST

Exam Week - 11 Jun 2018

Module/Topic	Chapter	Events and Submissions/Topic

Assessment Tasks

1 Individual Design Idea

Assessment Type
Written Assessment

Task Description
You must pitch your design idea following the template provided on Moodle. You will include a statement of the design problem and identification of 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. Your pitch should be concise and enticing to attract students to develop your idea.
To allow your design idea to be viewed by potential teammates, you must also complete the Design Idea Form on Moodle.

Assessment Due Date
Week 3 Friday (23 Mar 2018) 10:00 pm AEST

Return Date to Students
Week 5 Friday (6 Apr 2018)

Weighting
20%

Minimum mark or grade
25%

Assessment Criteria
A Marking Rubric is provided on Moodle that includes indicators of attainment at the 'Sound', 'Good' and 'Excellent' levels for each assignment topic.

Referencing Style

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

Submission
Online

Submission Instructions
Upload a single PDF AND complete the Design Idea Form

Learning Outcomes Assessed

- Develop a design specification by incorporating relevant Australian Standards and gathering information from potential users or clients

Graduate Attributes

- Communication
- Problem Solving
- Critical Thinking
- Team Work
- Ethical practice

2 Design Project Plan

Assessment Type
Written Assessment

Task Description
Your team will develop a Design Project Plan which will comprise a Team Charter, Project Scope, Work Breakdown Structure, Project Schedule and Risk Assessment. Templates are provided on Moodle.

Assessment Due Date
Week 5 Friday (6 Apr 2018) 10:00 pm AEST

Return Date to Students
Week 7 Friday (27 Apr 2018)

Weighting
20%

Minimum mark or grade
25%

Assessment Criteria
A Marking Rubric is provided on Moodle that includes indicators of attainment at the 'Sound', 'Good' and 'Excellent' levels for each assignment topic.

Referencing Style

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

Submission
Online

Submission Instructions
One member of your team must Upload a single PDF.

Learning Outcomes Assessed

- Pitch a design idea that proposes to investigate opportunities for improvement, solve a problem or produce a new product

Graduate Attributes

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

3 Team Report and Presentation

Assessment Type
Written Assessment

Task Description
The audience for your Team Report and Presentation is either a potential investor or a group of executives at your company. You should try to convince them that your design is worthy of further development and investment. You must show them that you have identified a need and have defined the problem, that you have carried out research to understand the current state-of-the-art, that you have developed an understanding of 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 consultation with stakeholders and consideration of their feedback.
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 applying engineering fundamentals, and it has potential to improve the life of the user.

Assessment Due Date
Week 11 Friday (25 May 2018) 10:00 pm AEST

Return Date to Students
Review/Exam Week Friday (8 June 2018)

Weighting
30%

Minimum mark or grade
25%

Assessment Criteria
A Marking Rubric is provided on Moodle that includes indicators of attainment at the 'Sound', 'Good' and 'Excellent' levels for each assignment topic.

Referencing Style

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

Submission
Online

Submission Instructions
One member of your team must Upload a single PDF of the Team Report. All team members are expect to assist with the Team Presentation.

Learning Outcomes Assessed

- Produce a functional prototype by applying project management skills, stakeholder feedback, relevant discipline knowledge, and the principles of sustainable development
- Communicate effectively, work productively, and be professionally accountable as part of a design team

Graduate Attributes

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

- Ethical practice

4 Portfolio of Learning Achievements

Assessment Type
Portfolio

Task Description
Prepare an electronic Portfolio of individual work as evidence of your achievements towards the unit learning outcomes while working on your team project. The Portfolio must be prepared using the template provided, and it shall only contain your work. The Portfolio must contain the following compulsory sections.

Grade Nomination: A self-assessment of your level of achievement ('Sound', 'Good' or 'Excellent') that you believe should be awarded for each task listed in the Portfolio marking rubric on Moodle. For each task, you will need to substantiate your claim by including the page numbers in your portfolio that contain evidence of meeting the associated indicators of attainment from the marking rubric. Evidence of your learning achievements will come from subsequent sections of your Portfolio including entries in your Workbook, Reflective Journal, and Self and Peer-Assessment Results. An example of a Grade Nomination is provided on Moodle.

Workbook: Can be typed, handwritten (then scanned) or a combination of both but must be neat, chronological and legible. The workbook contains all your work for the team project. It should contain separate entries with headings and the date, such as: 'April 20 – Project Risk Assessment'. These entries will show when you worked on each element of the project and how your ideas and capabilities have developed through the course. You should not go back and edit old entries as this may prohibit demonstrating skills development. The workbook cannot be completed retrospectively and must include **at least two entries each week** while working on the team project. Entries should demonstrate a variety of technical skills like researching, brainstorming, creating mind maps, flowcharts, methodologies, schedules, obtaining experimental data, undertaking data analysis, producing results, figures, charts, conclusions, or any other work done for your team project. It is good practice to add entries to your Workbook first and then send a copy to your teammates to ensure you retain the original work.

Reflective Journal: As with your workbook, it can be typed, handwritten (then scanned) or a combination of both but must be neat, chronological and legible. The Reflective Journal contains your thoughts about how you and your team are progressing with the project and what you have learnt and experienced either directly by doing the work or indirectly through observing others. Entries must have headings with the date and a title, such as: 'April 20 – Why I think Risk Assessment is important for engineers'. Reflective entries can demonstrate a variety of achievements like understanding how and when you learnt something, identifying effective ways to communicate and work with your peers, and comprehending the relevance of what you have learnt and experienced in your future engineering career. You should not go back and edit old entries as this may prohibit demonstrating your development. Thus, the Reflective Journal cannot be completed retrospectively. Refer to the Reflective Writing Guide on Moodle.

You should expect that your lecturer will ask to see your Workbook and Reflective Journal at any time during the team project to ensure that you are progressing suitably towards achieving the associated course learning outcomes.

Self- and Peer-Assessment: At milestones during the progression of your team project you will be required to complete anonymous Self- and Peer Assessment (SPA) surveys. SPAs provide de-identified formative feedback to you and your teammates about aspects of teamwork that are perceived by peers to be working well or could be improved. If you disagree with feedback from your teammates, your thoughts should be articulated through an entry in your Reflective Journal and sent to your lecturer for consideration. Guidelines for completing the SPAs are provided on Moodle.

Assessment Due Date
Review/Exam Week Monday (4 June 2018) 10:00 pm AEST

Return Date to Students

Prior to finalisation of grades

Weighting
30%

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 Portfolio tasks

Referencing Style

- Harvard (author-date)

Submission
Online

Submission Instructions
Upload a single PDF which includes active bookmarks in the Grade Nomination to all pages containing evidence of meeting the marking criteria.

Learning Outcomes Assessed

- Develop a design specification by incorporating relevant Australian Standards and gathering information from potential users or clients
- Produce a functional prototype by applying project management skills, stakeholder feedback, relevant discipline knowledge, and the principles of sustainable development
- Communicate effectively, work productively, and be professionally accountable as part of a design team
- Reflect on the processes of creative design, project management, and prototype production.

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