



ENEP12008 *Engineering Leadership*

Term 1 - 2020

Profile information current as at 03/05/2024 11:16 pm

All details in this unit profile for ENEP12008 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

As a student in the final year of your Bachelor of Engineering course, you will identify and analyse leadership and engineering management techniques applied within industry-based teams, and generate a personal vision for your leadership style. You will also document safety and environmental management systems applied in engineering workplaces, with a focus on cultural aspects. You will examine ethical principles, codes of ethics and apply approaches to ethical decision making. You will develop a three-year career plan outlining professional, technical and personal aspects of career development. In preparation for this unit, it is strongly recommended that you have undertaken industry practice experience in a workplace, either via Industry Practice unit(s) or vacation employment.

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

There are no requisites for this unit.

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 - 2020

- 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. **Report**

Weighting: 30%

2. **Case Study**

Weighting: 30%

3. **Portfolio**

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 Have Your Say Survey

Feedback

Assessments provided an opportunity to reflect on topics not previously encountered in the degree.

Recommendation

Continue to revise the unit content to remain contemporary and relevant.

Feedback from Have Your Say Survey

Feedback

Provide further guidance on assessment requirements and detail result feedback.

Recommendation

Encourage students to ask questions if any assessment aspects are unclear, and to request feedback on assessment marks.

Unit Learning Outcomes

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

1. Identify and analyse leadership and engineering management techniques
2. Generate a personal leadership vision
3. Document safety and environmental management systems applied in engineering workplaces, with a focus on cultural aspects
4. Apply professional judgement, standard approaches and codes of ethics to decision making within a business environment
5. Develop a three-year career plan outlining professional, technical and personal aspects of career development.

By undertaking this unit and students will demonstrate Engineers Australia's Stage One Competencies for Professional Engineers to a substantial degree.

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 - Report - 30%	•		•		
2 - Case Study - 30%				•	
3 - Portfolio - 40%		•			•

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 - Report - 30%	•		•	•	•					
2 - Case Study - 30%	•	•	•	•				•		
3 - Portfolio - 40%	•		•	•		•			•	

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)

Referencing Style

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

Teaching Contacts

Aruna Jayasuriya Unit Coordinator
a.jayasuriya@cqu.edu.au

Schedule

Week 1 - 09 Mar 2020

Module/Topic	Chapter	Events and Submissions/Topic
Engineering Management		

Week 2 - 16 Mar 2020

Module/Topic	Chapter	Events and Submissions/Topic
Engineering Management		
Commence development of Industry Report.		

Week 3 - 23 Mar 2020

Module/Topic	Chapter	Events and Submissions/Topic
Leadership		
Continue development of Industry Report.		

Week 4 - 30 Mar 2020

Module/Topic	Chapter	Events and Submissions/Topic
Safety Management		
Continue development of Industry Report.		

Week 5 - 06 Apr 2020

Module/Topic	Chapter	Events and Submissions/Topic
Guest Lectures		
Continue development of Industry Report.		

Vacation Week - 13 Apr 2020

Module/Topic	Chapter	Events and Submissions/Topic
--------------	---------	------------------------------

Week 6 - 20 Apr 2020

Module/Topic	Chapter	Events and Submissions/Topic
Ethics		
Complete development of Industry Report.		Industry Report Due: Week 6 Friday (24 Apr 2020) 10:00 pm AEST

Week 7 - 27 Apr 2020

Module/Topic	Chapter	Events and Submissions/Topic
Environmental Management		
Commence development of Ethics Case Study.		

Week 8 - 04 May 2020

Module/Topic	Chapter	Events and Submissions/Topic
Guest Lectures		
Continue development of Ethics Case Study.		

Week 9 - 11 May 2020

Module/Topic	Chapter	Events and Submissions/Topic
--------------	---------	------------------------------

Professional Development
Complete development of Ethics Case Study.

Ethics Case Study Due: Week 9
Friday (15 May 2020) 10:00 pm AEST

Week 10 - 18 May 2020

Module/Topic	Chapter	Events and Submissions/Topic
Career Planning Commence development of Career Plan Portfolio.		

Week 11 - 25 May 2020

Module/Topic	Chapter	Events and Submissions/Topic
Review Continue development of Career Plan Portfolio.		

Week 12 - 01 Jun 2020

Module/Topic	Chapter	Events and Submissions/Topic
Review Complete development of Career Plan Portfolio.		Career Plan Portfolio Due: Week 12 Friday (5 June 2020) 10:00 pm AEST

Review/Exam Week - 08 Jun 2020

Module/Topic	Chapter	Events and Submissions/Topic
--------------	---------	------------------------------

Exam Week - 15 Jun 2020

Module/Topic	Chapter	Events and Submissions/Topic
--------------	---------	------------------------------

Assessment Tasks

1 Industry Report

Assessment Type

Report

Task Description

The first assessment item involves submission of a report based on your industry experiences with aspects of management, safety and leadership.

You report will cover three topics:

1. Management Process
2. Safety Management
3. Leadership Evaluation

Topic 1: Management Process

As you have learned in the course material, Engineering Management involves the application of general management functions within engineering teams. In addition, amongst the four well-known management functions, you are likely to be exposed to the Controlling function in a Graduate Engineer role.

You will review an industry-based engineering process and document how management control techniques are embedded within the process to ensure the desired results are achieved. The basis for this topic can be derived from one of the following scenarios:

- Practical industry experience you have undertaken, e.g. via part-time, vacation employment or work placement.
- Observation and enquiry of an industry-based engineering process undertaken during the course of this unit.
- A case study of a documented engineering process that you have sourced via peer-reviewed literature.

You should commence with an overview of the process, including the organisation, the particular group(s) involved and the purpose of the process in terms of its support for the wider organisation's products or services.

You should then identify and explain how each aspect of the Control Process are applied to your chosen scenario:

- The objectives and standards used, including definition of key performance indicators, and how these relate to higher level objectives of the organisation. Do not neglect to include less visible, but important aspects such as safety or environmental standards.
- How performance of the process is measured, including the engineering principles and management metrics involved in measurement. You should also identify the people, techniques, tools, and technology involved in measurement

processes, as well as the type, frequency and characteristics of measurements.

- The analysis and evaluation techniques that are used in order to determine if corrective action is required. This section should identify the criteria used that would trigger a management exception requiring action.
- Actions that are planned to be taken when differences between actual and desired performance are detected. If your experience did not identify instances of corrective action being planned or executed, outline at least two (2) actions that you would propose if exceptions were identified.

Topic 2: Safety Management

In the second topic, you will leverage your industry-based experience to document aspects of a Safety Management System (SMS) and evaluate the influence of safety leadership and culture on the safety success of an organisation.

The basis for this topic can be derived from one of the following scenarios:

- Practical industry experience you have undertaken, e.g. via part-time, vacation employment or work placement.
- Observation and enquiry of an organisation undertaken during the course of this unit.

You should commence with an overview of the organisation and your role.

An operational SMS will include safety processes and procedures that address the following aspects:

- Hazard identification arrangements
- Risk assessments
- Risk control
- Emergency management
- Injury management and return to work
- Supervision
- Training
- Reporting
- Communication, information and awareness

Based on your nominated experience:

- Choose four (4) of the above SMS elements and document the procedures that were implemented by the organisation to address these safety requirements.
- Describe the safety culture within the organisation and outline how safety leadership played a role in the way safety was managed in the workplace.

Topic 3: Leadership Evaluation

For the final part this assessment, you are required to provide an evaluation of leadership that you have experienced from a practical experience.

Based on your own workplace experience, identify how a formal leadership role was exercised. You may elect to choose your own direct supervisor, or another staff member holding a formal leadership role. Your discussion should address either:

- a situation that occurred requiring the application of leadership skills, what was done, and the resulting outcome for the people involved.
- a situation where you felt that leadership skills could have been applied in order to improve an outcome.

Length and Composition

As a guideline, the length of your report should meet the following guidelines:

- Management Process: 1,000 words
- Safety Management: 1,000 words
- Leadership Evaluation: 400 words

These word length guidelines exclude any references. Reports that are substantially longer than this or shorter than this (+/- 40%) are unlikely to score as highly as those that make the best use of the required word length (being on-target and making the best use of the word allocation is always better than being off-message). However, you should not worry about a few words either way - this is a guideline only, and I do not have a 'negative marking scheme' where marks are deducted if the word count is more than 10% over the guideline.

Text should be word-processed, with appropriate layout and use of headings/sub-headings. Diagrams and tabular presentation should be used to illustrate specific aspects of your reports as required. Please ensure that you correctly cite/reference all sources of used, unless they are original and composed by you.

Assessment Due Date

Week 6 Friday (24 Apr 2020) 10:00 pm AEST

Return Date to Students

Week 8 Friday (8 May 2020)

Weighting

30%

Minimum mark or grade

50%

Assessment Criteria

Ability to describe management processes.

Analyse the relationship between standards, measures, and feedback.
Ability to identify and describe safety processes.
Articulate the relationship of leadership and culture to performance.
Describe and evaluate leadership skills.
Accuracy and clarity of the report.
Appropriate use of sentence structure and grammar.

Referencing Style

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

Submission

Online

Learning Outcomes Assessed

- Identify and analyse leadership and engineering management techniques
- Document safety and environmental management systems applied in engineering workplaces, with a focus on cultural aspects

Graduate Attributes

- Communication
- Critical Thinking
- Information Literacy
- Team Work

2 Ethics Case Study

Assessment Type

Case Study

Task Description

Your second assessment item involves analysing and applying ethical decision-making processes to a case study related to engineering ethics, responding to the ethical issues raised via a Case Study Report.

Your task is to select two (2) of the supplied Case Studies and document how you would approach an ethical issue identified in the case. You will then apply a structured decision-making process to reach a decision regarding your issue. Your decisions should be supported at each stage by referencing appropriate external standards, laws, guidelines and codes, or by describing your personal beliefs and opinions.

For each Case Study, provide a response based on the following guidelines.

Response Guidelines

Commence your response with a summary of your understanding of the case study, identifying the key ethical issues raised. If multiple issues are identified, identify the issue that you are proposing to decide on via the subsequent analysis and decisions.

The major body of your report should mirror the steps included in the decision-making process, as defined by Davis (2013) in your course material:

- State the Problem: including the primary issue identified in the case study.
- Assess the Facts: examine the legal aspects, technical and professional aspects, and state any assumptions that you are required to make.
- Identify the Stakeholders: including individuals, groups, and any more broadly-defined entities (e.g. the environment) that may be impacted by decisions to be made.
- List Options: you should attempt to define at least three (3) options that you will apply tests to in the subsequent step.
- Option Tests: apply relevant test for the selected options using criteria that are relevant to the case study.
- Tentative Choice: assess briefly whether you believe the original issues has been addressed.
- Final Choice: define your final choice, answering the appropriate review questions in relation to this choice.

You should conclude your response with a short summary of the decision and recommendation. Note that in ethical cases, there is unlikely to be "one right answer", as ethics are influenced by individual viewpoints and factors such as age, knowledge and experience.

Length and Composition

As a guideline, the length of your Case Study report should be around 1600 words, excluding references. Reports that are substantially longer than this (say over 2000 words) or shorter than this (say less than 1200 words) are unlikely to score as highly as those that make the best use of the 1600-word length (being on-target and making the best use of the word allocation is always better than being off-message). However, you should not worry about a few words either way (this is a guideline only, and I do not have a 'negative marking scheme' where marks are deducted if the word count is more than 10% over the guideline).

Text should be word-processed, with appropriate layout and use of headings/sub-headings. Please ensure that you

correctly cite/reference all sources of used, unless they are original and composed by you.

Assessment Due Date

Week 9 Friday (15 May 2020) 10:00 pm AEST

Return Date to Students

Week 12 Friday (5 June 2020)

Weighting

30%

Minimum mark or grade

50%

Assessment Criteria

Ability to identify and describe ethical issues.
Analyse relevant legal, technical and professional issues.
Ability to provide reasonable decision options.
Express ethical views in a clear and appropriate manner.
Consistently apply a decision making framework.
Accuracy and clarity of the report.
Appropriate use of sentence structure and grammar.

Referencing Style

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

Submission

Online

Learning Outcomes Assessed

- Apply professional judgement, standard approaches and codes of ethics to decision making within a business environment

Graduate Attributes

- Communication
- Problem Solving
- Critical Thinking
- Information Literacy
- Ethical practice

3 Career Plan Portfolio

Assessment Type

Portfolio

Task Description

The final assessment item of this unit involves the development of a career plan, presented as a portfolio and consisting of the following parts:

1. Leadership Vision
2. Technical Development Plan
3. Professional Development Plan
4. Summary

Leadership Vision

The first part of your portfolio involves assessing your own current leadership style and identifying practical improvements in your leadership skills and abilities.

You should undertake the Leadership Style Assessment, answering candidly and documenting your answers and results. Based the suggested results, reflect on how your assessed style matches your self-perceived performance in an industry work placement situation. Provide three situational examples relating to your own leadership style that support your conclusions.

You should now review the Leadership Vision Tool, documenting the answers to the questions and providing a vision and mission statement.

You should now develop a brief plan to improve your leadership capability, focussing on the initial two years of your career. Based on your understanding of the broader concept of leadership, identify three (3) practical actions to improve your leadership abilities, aligning to your stated vision and mission.

Note that these improvements may be opportunities for exercising leadership within technical, professional, workplace, community, or social contexts. Or they may involve undertaking further reading and/or skills development. They should

be written with the SMART model in mind: i.e. Specific, Measurable, Achievable, Realistic, and Timely.

Technical Development Plan

Based on your study and work experience to date, you may have a firm opinion about the type of specialization you may want to pursue within your chosen discipline. However, if you have not considered this to date, this exercise provides you with the opportunity to do some research to identify available options.

You should firstly outline your preferred technical specialisation in the context of your discipline, and then identify the key skills and/or competencies that professionals practicing in this field need to possess. You should couch your skills assessment in terms of Stage 1 Competency 1.3, i.e. *in-depth understanding of specialist bodies of knowledge within the engineering discipline*.

Conduct some further research, focused on future changes in your specialisation, identifying at least three (3) trends that could influence how this field is applied. Such trends could include:

- Economic conditions influencing demand and supply of products or services.
- Increasing use of information technologies impacting efficiency and performance.
- Trends in the use of alternate, or replacement technologies within an industry.
- Research offering the potential for evolutionary, or revolutionary improvements.
- Regulatory changes causing changes to the use of materials and processes.

Based on your currently-assessed skills, document a plan consisting of three (3) actions that you will undertake over the next two years in order to develop your technical proficiency within your specialisation. Your aim should be to achieve technical competence to the point at which you would consider yourself Stage 1 Competent: i.e. *Proficiently applies advanced technical knowledge and skills in at least one specialist practice domain of the engineering discipline*.

Your actions could include undertaking formal postgraduate studies or short courses, attending industry conferences, obtaining industry certifications, independent reading, obtaining a mentor, or joining a technical committee. As above, your plans should conform to the SMART model.

Professional Development Plan

The third part of your portfolio involves developing a development plan that addresses the professional aspects of your career, with a 2 year timeframe in mind. As per the Engineers Australia Career Development Guide, your plan should address Years 1-2 in the "Experience Journey".

Provide at least five (5) ideas and actions that address the following professional development areas:

- Seeking feedback from your stakeholders (employers, clients).
- How you will start to build a network of contacts.
- Non-technical skills and knowledge (e.g. project management skills).
- How you will pursue Chartered or Registered status.
- Your current thinking on longer term (5 year) goals.

Summary

As the final part of your portfolio, include a tabular summary of your plan. This will consist of the following elements:

1. Your personal leadership vision and mission.
2. Technical Development Plan actions.
3. Professional Development Plan actions.

Assessment Due Date

Week 12 Friday (5 June 2020) 10:00 pm AEST

Return Date to Students

Exam Week Friday (19 June 2020)

Weighting

40%

Minimum mark or grade

50%

Assessment Criteria

Analyse leadership skills.

Express an achievable vision and mission.

Conduct research into a technical specialisation.

Self assess and perform a skills gap analysis.

Articulate feasible (SMART) technical development actions.

Articulate feasible (SMART) professional development actions.

Summarise plans and actions.

Accuracy and clarity of the report.

Appropriate use of sentence structure and grammar.

Referencing Style

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

Submission

Online

Learning Outcomes Assessed

- Generate a personal leadership vision
- Develop a three-year career plan outlining professional, technical and personal aspects of career development.

Graduate Attributes

- Communication
- Critical Thinking
- Information Literacy
- Information Technology Competence
- Social Innovation

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