In Progress

Please note that this Unit Profile is still in progress. The content below is subject to change.

ENEM28005 *Introduction to Engineering Asset and Maintenance Management*
Term 2 - 2024

Profile information current as at 21/05/2024 04:00 am

All details in this unit profile for ENEM28005 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

Engineers are often required to evaluate the performance of various types of engineering assets. The ability to analyse maintenance data and develop effective maintenance plans are important skills for today's engineers. This unit will introduce you to asset maintenance standards, strategies, philosophies, and procedures, including the basic principles of asset management systems. You will investigate and report on key concepts relating to asset and maintenance management in engineering organisations. You will learn the fundamentals of asset maintenance and management strategies, reliability, and life cycle engineering of assets to maximise and optimise their value. You will gain insight into the governing ISO standards and their application in real-world scenarios. You will learn how to use different diagnostic tools such as failure mode effect and critical analysis, reliability-centred maintenance, and collect and analyse maintenance data in several engineering contexts. These learning objectives will be achieved through successful completions of online quizzes, a group project, and an individual assignment. This knowledge will help to predict the future reliability performance of operating assets, as well as to develop and recommend appropriate maintenance strategies for different engineering assets.

Details

Career Level: *Postgraduate*
Unit Level: *Level 8*
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 2 - 2024

- Melbourne
- 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 Postgraduate 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

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.

Unit Learning Outcomes

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

1. Apply theoretical principles, standards, frameworks, and strategies underpinning engineering asset and maintenance management through group project and individual assignments
2. Analyse the performance of engineering assets using different fault detection, diagnostic, and life cycle management tools
3. Apply maintenance and reliability methods to predict the useful life of engineering assets
4. Model and predict the performance of engineering assets through data acquisition using analytical and statistical tools
5. Critique contemporary theories of leadership for effective management of assets
6. Work autonomously and as part of a team to deliver high-quality technical reports.

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

Intermediate

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

1.6 Understanding of the scope, principles, norms, accountabilities and bounds of sustainable engineering practice in the specific discipline. (LO: 3I 5I)

2.2 Fluent application of engineering techniques, tools and resources. (LO: 2I 4I)

2.4 Application of systematic approaches to the conduct and management of engineering projects. (LO: 1I 3I)

3.1 Ethical conduct and professional accountability. (LO: 6I)

3.2 Effective oral and written communication in professional and lay domains. (LO: 5I)

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

3.5 Orderly management of self and professional conduct. (LO: 5I)

3.6 Effective team membership and team leadership. (LO: 6I)

Advanced

1.2 Conceptual understanding of the mathematics, numerical analysis, statistics, and computer and information sciences that underpin the engineering discipline. (LO: 3A)

1.4 Discernment of knowledge development and research directions within the engineering discipline. (LO: 1A)

Note: LO refers to the Learning Outcomes number(s) that link to the competency and the levels: N – Introductory, I – Intermediate and A – Advanced.

Refer to the Engineering Postgraduate Units Moodle site for further information on the Engineers Australia Stage 1 Competency Standard for Professional Engineers and course-level mapping information
https://moodle.cqu.edu.au/course/view.php?id=11382

Alignment of Learning Outcomes, Assessment and Graduate Attributes

| — N/A Level | ○ Introductory Level | ● Intermediate Level | ● Graduate Level | ○ Professional Level | ○ Advanced Level |

Alignment of Assessment Tasks to Learning Outcomes

Assessment Tasks	Learning Outcomes					
	1	2	3	4	5	6
1 - Online Test - 30%	●		●		●	
2 - Group Work - 40%			●	●		●
3 - Project (applied) - 30%		●		●		●

Alignment of Graduate Attributes to Learning Outcomes

Graduate Attributes	Learning Outcomes					
	1	2	3	4	5	6
1 - Knowledge	○		○	○		
2 - Communication		○		○		○
3 - Cognitive, technical and creative skills		○	○	○		
4 - Research	○		○			
5 - Self-management						○
6 - Ethical and Professional Responsibility						○
7 - Leadership					○	
8 - Aboriginal and Torres Strait Islander Cultures						

Textbooks and Resources

Information for Textbooks and Resources has not been released yet.
This information will be available on Monday 17 June 2024

Academic Integrity Statement

Information for Academic Integrity Statement has not been released yet.
This unit profile has not yet been finalised.