

Unit Outline (Higher Education)

Institute / School:	Institute of Innovation, Science & Sustainability
Unit Title:	MAINTENANCE AND RELIABILITY ENGINEERING PROJECT
Unit ID:	MREGC5008
Credit Points:	15.00
Prerequisite(s):	(At least 45 credit points from program GEM4 or GMR9)
Co-requisite(s):	Nil
Exclusion(s):	Nil
ASCED:	039999

Description of the Unit:

This advanced unit requires students to complete their capstone project for Master of Maintenance and Reliability Engineering (MRE) and Graduate Diploma of Engineering Maintenance Management. In this unit a student is expected to undertake a complex project involving the solution of an industry-based maintenance and reliability engineering and/ or asset management problem. Students will need to applying relevant knowledge and skills acquired in other maintenance and reliability units. Students will be required to scope their project tailored to an industry setting, undertake research activities, exercise time management, produce a technical report and present their findings based on project outcomes for reducing costs and risks and enhancing asset performance. This is a compulsory unit for Master of Maintenance and Reliability Engineering (MRE) and Graduate Diploma of Engineering Maintenance Management.

Grade Scheme: Graded (HD, D, C, P, MF, F, XF)

Work Experience:

No work experience: Student is not undertaking work experience in industry.

Placement Component: No

Supplementary Assessment: No

Supplementary assessment is not available to students who gain a fail in this Unit.

Course Level:

Level of Unit in Course	AQF Level of Course					
	5	6	7	8	9	10
Introductory	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Level of Unit in Course	AQF Level of Course					
	5	6	7	8	9	10
Intermediate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Advanced	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	✓	<input type="checkbox"/>

Learning Outcomes:

On successful completion of the unit the students are expected to be able to:

Knowledge:

- K1.** Identify and describe opportunities for improvement and apply knowledge and skills gained in MRE unit to industry problems.
- K2.** Define methodologies and select tools and techniques for continual improvement in maintenance and reliability engineering projects.
- K3.** Review alternative options and recommend solutions for industry relevant MRE problems.

Skills:

- S1.** Analyse failure, maintenance, safety data and industry reports for project scoping.
- S2.** Plan and conduct research and review findings for continuous improvements in MRE and asset management.
- S3.** Write techno-commercial reports recommending preferred options for solving maintenance and reliability engineering problems in industry setting.

Application of knowledge and skills:

- A1.** Construct problems and formulate creative and innovative solutions for maintenance and reliability engineering problems.
- A2.** Write and present techno-commercial report from lessons learned and opportunities for improvements and justify recommendations for reducing costs and risks and enhancing performance in maintenance and reliability engineering of assets in workplace.

Unit Content:

This unit covers industry problem based research, structuring and drafting of project report, technical paper and communicate to stakeholder.

Topics may include:

- Project scoping for a practical exercise in maintenance and reliability engineering explaining personal responsibility expected for selecting a realistic industrial problem and carry out investigation.
- Tools and techniques in applying knowledge learned in MRE program for defining and analysing potential solutions.
- Writing project report and technical paper.
- Presentation of research findings to stakeholders.

Learning Task and Assessment:

This 15 CP online unit at postgraduate level requires a minimum time commitment of 150 hours of study. Assessments need to be submitted online in assessment submission area

allocated for each assessment.

Learning Outcomes Assessed	Assessment Tasks	Assessment Type	Weighting
K1, K2, K3, S1, S2, S3, A1, A2	Report with scope of the maintenance and reliability engineering problem solving project.	Report	
K1, K2, K3, S1, S2, S3, A1, A2	Analysis and report with progress of project.	Analysis and report	20% - 50%
K1, K2, K3, S1, S2, S3, A1, A2	Analysis and final report of project findings.	Analysis and report	50% - 80%

Adopted Reference Style:

Other (IEEE)

Refer to the [library website](#) for more information

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