

Unit Outline (Higher Education)

Institute / School: Institute of Innovation, Science, and Sustainability

Unit Title: PROFESSIONAL ENGINEERING

Unit ID: ENGIN1001

Credit Points: 15.00

Prerequisite(s): Nil

Co-requisite(s): Nil

Exclusion(s): (ENCOR1005 and GPENG1001)

ASCED: 039999

Description of the Unit:

A professional engineer needs to be able to convey an idea to a diverse audience, manage their and others' time, and collaborate with other disciplines. This unit provides an introduction to the techniques that engineers use in the work environment to manage a project and develop ideas for a more sustainable future. The unit develops a basic understanding of how engineers analyse a problem and find an appropriate solution, taking into account all constraints, such as environmental, financial, technical, and social. You will be introduced to the process of working in teams and how to clearly communicate to yield an appropriate solution to an engineering problem. Through major team challenges, your skill of working or leading a team with effective communication will be honed.

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: Yes

Where supplementary assessment is available a student must have failed overall in the Unit but gained a final mark of 45 per cent or above, has completed all major assessment tasks (including all sub-components where a task has multiple parts) as specified in the Unit Description and is not eligible for any other form of supplementary assessment

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"/>
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"/>	<input type="checkbox"/>

Learning Outcomes:

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

Knowledge:

- K1.** Recognize the skills which an engineer should be equipped with.
- K2.** Recognise the profession of engineering and its various disciplines.
- K3.** Identify where engineers can contribute to society.

Skills:

- S1.** Synthesize communication in a professional environment and at an appropriate level.
- S2.** Evaluate the principles and importance of occupational health and safety in the context of the engineering profession.
- S3.** Appraise collaborative activities with team members to solve a real engineering problem.

Application of knowledge and skills:

- A1.** Identify and apply theory to solve engineering problems.
- A2.** Develop teamwork to solve engineering problems.

Unit Content:

Topics may include:

- Understanding the engineering profession and systems
- Technical report writing in the engineering profession
- Information retrieval and management
- Introduction to engineering economics
- Cost-Benefit analysis in engineering projects
- Engineering design for sustainable development
- Life cycle analysis and assessment

- Basic workshop safety

Learning Task and Assessment:

Learning Outcomes Assessed	Assessment Tasks	Assessment Type	Weighting
K1 - K3,	Understanding of the scope, principles, norms, accountabilities and bounds of contemporary engineering practise in the technology domain.	Mid-Semester Test/quizzes/class-test	25 - 30%
S1,S3, A1, A2	Team-based project that will be tasked with deriving a solution to an engineering problem. If available this will be based around the Engineers Without Borders (http://www.ewbchallenge.org/content/aims-objectives) challenge.	project Proposal, report and presentation	45 - 55%
S1,S2	Understanding the principles and importance of occupational health and safety in the context of the engineering profession.	Workshop/Lab Report	10% - 15%

Adopted Reference Style:

Other (Refer to the library website for more information: IEEE)

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

Fed Cite - [referencing tool](#)