



Course Outline (Higher Education)

School:	School of Engineering, Information Technology and Physical Sciences
Course Title:	ENGINEERING PROJECT MANAGEMENT AND SUSTAINABLE DESIGN
Course ID:	ENGIN2002
Credit Points:	15.00
Prerequisite(s):	(ENCOR1005 or ENGIN1001)
Co-requisite(s):	Nil
Exclusion(s):	(ENMEC2121 and ENMTX2050)
ASCED:	030101

Description of the Course :

Within all branches of engineering a practising engineer needs to be able to manage a project and develop designs to solve problems and develop new products. Following the introductory courses in the first year this course will build upon the students knowledge of the design process, sustainability and further their knowledge of the use of computer aided design through a multidisciplinary group project based approach. In addition it will also further develop the students ability to manage projects by developing an understanding of the concepts and tools needed to manage an engineering project.

Grade Scheme: Graded (HD, D, C, etc.)

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 course but gained a final mark of 45 per cent or above and submitted all major assessment tasks.

Program Level:

Level of course in Program	AQF Level of Program					
	5	6	7	8	9	10
Introductory	■	■	■	■	■	■

Level of course in Program	AQF Level of Program					
	5	6	7	8	9	10
Intermediate	■	■	✓	■	■	■
Advanced	■	■	■	■	■	■

Learning Outcomes:

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

Knowledge:

- K1.** Recognise the multidisciplinary approaches to engineering design .
- K2.** Select the appropriate tools for a design problem.
- K3.** Inquire into, and evaluate, the importance of sustainability in design and project management.

Skills:

- S1.** Develop and integrate the various elements of a comprehensive engineering design.
- S2.** Use appropriate engineering project management methods and tools.
- S3.** Categorise the stages of project management and design where sustainability issues are relevant.

Application of knowledge and skills:

- A1.** Analyse and evaluate an engineering design, within the context of its capabilities and limitations, to address critical issues in an engineering case study.
- A2.** Analyse and evaluate an engineering project within the context of a case study.

Course Content:

Topics may include:

- A selection of the below items covered through lectures on;
 - a. Design Specifications & Concept Selection Methods, Human Factors
 - b. FMEA, Risk, Ethics, Systems, Sustainability, Standards, Patents & Standards Marking
- Management of projects and resources and the economics of engineering projects.
- Topics relevant to the individual engineering discipline that will be embedded in the multidisciplinary project

Values:

- V1.** Appreciate the role of design, project management and sustainability in the formulation of engineering solutions.

Graduate Attributes

The Federation University FedUni graduate attributes (GA) are entrenched in the Higher Education Graduate Attributes Policy (LT1228). FedUni graduates develop these graduate attributes through their engagement in

explicit learning and teaching and assessment tasks that are embedded in all FedUni programs. Graduate attribute attainment typically follows an incremental development process mapped through program progression. **One or more graduate attributes must be evident in the specified learning outcomes and assessment for each FedUni course, and all attributes must be directly assessed in each program**

Graduate attribute and descriptor		Development and acquisition of GAs in the course			
		Learning Outcomes (KSA)	Code A. Direct B. Indirect N/A Not addressed	Assessment task (AT#)	Code A. Certain B. Likely C. Possible N/A Not likely
GA 1 Thinkers	Our graduates are curious, reflective and critical. Able to analyse the world in a way that generates valued insights, they are change makers seeking and creating new solutions.	K1-K3, S1-S3, A1-A2	A	AT1-AT3	A
GA 2 Innovators	Our graduates have ideas and are able to realise their dreams. They think and act creatively to achieve and inspire positive change.	Not applicable	Not applicable	Not applicable	Not applicable
GA 3 Citizens	Our graduates engage in socially and culturally appropriate ways to advance individual, community and global well-being. They are socially and environmentally aware, acting ethically, equitably and compassionately.	K3, S3, A1	A	AT1-AT3	B
GA 4 Communicators	Our graduates create, exchange, impart and convey information, ideas, and concepts effectively. They are respectful, inclusive and empathetic towards their audience, and express thoughts, feelings and information in ways that help others to understand.	K3, S2, A1-A2	A	AT1-AT3	A
GA 5 Leaders	Our graduates display and promote positive behaviours, and aspire to make a difference. They act with integrity, are receptive to alternatives and foster sustainable and resilient practices.	K2, S2-S3, A1-A2	B	AT1-AT3	B

Learning Task and Assessment:

Learning Outcomes Assessed	Learning Tasks	Assessment Type	Weighting
K1 - K3, S1 - S3, A1 - A2	A group presentation of the work undertaken in the group project.	Presentation	20 - 30%
K1 - K3, S1 - S3, A1 - A2	A group report detailing the design of an engineering system.	Report	40 - 60%
K1 - K3, S1 - S3, A1 - A2	Individual report demonstrating project management techniques.	Portfolio/Report	10 - 20%

Adopted Reference Style:

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