



Course Outline (Higher Education)

School:	School of Engineering, Information Technology and Physical Sciences
Course Title:	ENGINEERING DESIGN PROJECT
Course ID:	ENGIN3002
Credit Points:	15.00
Prerequisite(s):	(ENGIN2002 or ENMTX2050)
Co-requisite(s):	Nil
Exclusion(s):	(ENCIV3360 and ENMEC2120 and ENMEC2121 and ENMEC3250 and ENMTX3800)
ASCED:	039999

Description of the Course:

This course will develop advanced principles of engineering design. Approaches to the design of specific artifacts are considered in the broader context of the choices presented to a design engineer. The design process includes considerations of safety and compliance with standards. Assessment of failure is also discussed in some depth. This course will have a common taught component with a range other engineering disciplines and a discipline specific group design.

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

Program Level:

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

Learning Outcomes:

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

Knowledge:

- K1.** Understand physics theories and mathematical methods often used in engineering design
- K2.** Compare and explain various engineering design principles.
- K3.** Relate the complexities of engineering design within the students chosen engineering discipline.

Skills:

- S1.** Design a complex engineering system.
- S2.** Communicate the results of a design assignment by means of engineering drawings.
- S3.** Communicate the results of a design assignment by means of a design report.
- S4.** Employ computer aided algebra and design packages in engineering projects

Application of knowledge and skills:

- A1.** Integrate the knowledge and understanding from one of the different engineering disciplines in designing engineering systems.
- A2.** Apply methods and codes of engineering design within a team environment.
- A3.** Manage a defined sustainable engineering design project

Course Content:

Topics may include:

- Lectures on higher level design theory, such as, design specifications, concept selection methods, standards, patents, design of machine components and human factors.
- Topics relevant to the individual engineering discipline that will be embedded in the group project

Values:

- V1.** Understand the role and limitations of engineering design

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)	Assessment task (AT#)

Graduate attribute and descriptor		Development and acquisition of GAs in the course	
		Learning Outcomes (KSA)	Assessment task (AT#)
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	AT1
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.	S1-S4, A1-A2	AT1
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.	A3	AT1
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.	S2, S3	AT1
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.	S2, S3 and A3	AT1

Learning Task and Assessment:

Learning Outcomes Assessed	Learning Tasks	Assessment Type	Weighting
K1 - K3, S1 - S3, A1 - A2	Team-based design and analysis activities will be undertaken to enhance students problem solving and design skills. Report-type submission(s) would be required from student teams.	Report	100%

Adopted Reference Style:

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

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

Fed Cite - [referencing tool](#)