



Unit Outline (Higher Education)

Institute / School:	Institute of Innovation, Science & Sustainability
Unit Title:	Engineering Design Project
Unit ID:	ENGIN3002
Credit Points:	15.00
Prerequisite(s):	(ENGIN2002 or ENMEC2121 or ENMTX2050)
Co-requisite(s):	Nil
Exclusion(s):	(ENCIV3360 and ENMEC2120 and ENMEC2121 and ENMEC3250 and ENMTX3800)
ASCED:	039999

Description of the Unit:

This unit 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 unit 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

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						

Level of Unit in Course	AQF Level of Course					
	5	6	7	8	9	10
Intermediate	■	■	■	■	■	■
Advanced	■	■	✓	■	■	■

Learning Outcomes:

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

Knowledge:

- K1.** Interpret physics theories and mathematical methods used in engineering design
- K2.** Investigate and explain various engineering design principles.
- K3.** Explain and analyse how theories build into the complexities of engineering design within the students chosen engineering discipline.

Skills:

- S1.** Analyse 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.** Evaluate the use of computer-aided engineering for design projects

Application of knowledge and skills:

- A1.** Integrate the knowledge and skills from one of the various engineering disciplines in designing engineering systems.
- A2.** Apply methods and codes of engineering design within a team environment.
- A3.** Manage an assigned sustainable engineering design project
- A4.** Communicate the outcome of your work in textual and graphical formats.

Unit 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

Learning Task and Assessment:

Learning Outcomes Assessed	Assessment Tasks	Assessment Type	Weighting
K1 - K3, S1 - S4, A1 - A4	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](#)