

Unit Outline (Higher Education)

Institute / School: Institute of Innovation, Science & Sustainability

Unit Title: ENGINEERING PHYSICS

Unit ID: ENGIN1002

Credit Points: 15.00

Prerequisite(s): Nil

Co-requisite(s): Nil

Exclusion(s): (ENCOR1021 and ENCOR2100 and GPENG1002)

ASCED: 039999

Description of the Unit:

Within all engineering disciplines there are core concepts that underpin our knowledge as practising engineers. This unit will introduce students to the principles of engineering that are used by engineers to analyse fluids, heat and temperature, electrical and electronic systems, areas that are of crucial importance in the 21st century. The unit will introduce you to the fundamental concepts needed to analyse these topics that will support your learning in later years of your programme of study so that at the end of the unit you will have a fundamental understanding that will allow you to design and analyse simple systems.

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.** Explain the techniques for the analysis of electrical and electronic systems.
- K2.** Explain the techniques for the analysis of thermofluid systems.
- K3.** Recognise the laws governing the behaviour of electrical and electronic systems.
- K4.** Recognise the laws governing the behaviour of thermofluid systems.

Skills:

- S1.** Develop appropriate mathematical models for the analysis of electrical and electronic systems.
- S2.** Develop appropriate mathematical models for the analysis of thermofluid systems.
- S3.** Demonstrate problem solving in a clear, logical and concise way

Application of knowledge and skills:

- A1.** Analyse simple electrical and electronic systems.
- A2.** Analyse simple thermofluid systems.
- A3.** Apply mechanics principles in the analysis of experimental outcomes and in simple design situations

Unit Content:

Topics may include:

- Fundamental fluid mechanics
- Thermodynamic laws and conduction
- Fundamental electrical and electronic circuits
- Fundamental digital electronics

Learning Task and Assessment:

Learning Outcomes Assessed	Assessment Tasks	Assessment Type	Weighting
K1 - K4, S1 - S3, A1 - A3	An examination on any or all material covered in the unit.	Examination	40 - 60%

Learning Outcomes Assessed	Assessment Tasks	Assessment Type	Weighting
K1 - K4, S1 - S3, A1 - A3	A range of laboratory and other exercises will be undertaken to support the theoretical development during lectures.	Report/Presentation/Quiz/Test	40 - 60%

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](#)