



Course Outline (Higher Education)

School:	School of Engineering, Information Technology and Physical Sciences
Course Title:	ENGINEERING PHYSICS
Course ID:	ENGIN1002
Credit Points:	15.00
Prerequisite(s):	Nil
Co-requisite(s):	Nil
Exclusion(s):	(ENCOR1021 and ENCOR2100)
ASCED:	039999

Description of the Course :

Within all engineering disciplines there are core concepts that underpin our knowledge as practising engineers. This course 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 course 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 course you will have a fundamental understanding that will allow you to design and analyse simple systems.

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.** 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

Course Content:

Topics may include:

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

Values:

- V1.** Appreciate the role and limitations of physical laws and mathematical models in the analysis of real physical situations of relevance to engineering.
- V2.** Demonstrate a professional attitude towards self, supervisors and colleagues.
- V3.** Demonstrate an understanding of teamwork skills and technique.

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-K5, S1-S3, A1-A3	A	1, 2	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	N/A	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.	Not applicable	N/A	Not applicable	Not applicable
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.	Not applicable	N/A	Not applicable	Not applicable
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.	Not applicable	N/A	Not applicable	Not applicable

Learning Task and Assessment:

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