ENGR 1012 ENGINEERING PHYSICS (WSTC ASSOCD)

Credit Points 10

Legacy Code 700153

Coordinator Upeka Kuruppu (https://directory.westernsydney.edu.au/search/name/Upeka Kuruppu/)

Description This subject serves as an introduction to the fundamentals of engineering physics with appropriate applications in a wide range of engineering and industrial design systems. Students will be expected to solve problems by applying the laws and principles of engineering physics in the following areas covered by the subject - units and vectors, linear and circular motion, photons, electrons and atoms, force systems and equilibrium, work and energy applications, dynamics of rotational motion, fluid dynamics, heat and thermodynamics, periodic motion and wave phenomena, electricity and magnetism.

School Eng, Design & Built Env

Discipline Other Engineering And Related Technologies

Student Contribution Band HECS Band 2 10cp

Check your fees via the Fees (https://www.westernsydney.edu.au/currentstudents/current_students/fees/) page.

Level Undergraduate Level 1 subject

Equivalent Subjects ENGR 1011 - Engineering Physics ENGR 1013 - Engineering Physics (WSTC)

Restrictions Students must be enrolled at Western Sydney University, The College in 7022 Associate Degree in Engineering

Assumed Knowledge

HSC physics and HSC mathematics (not General Mathematics).

Learning Outcomes

On successful completion of this subject, students should be able to:

1. Identify and apply System Internationale (SI) units in the areas covered in this unit
2. Analyse and solve problems by applying the laws and principles of engineering physics in the following areas covered by the subject ? units and vectors, linear and circular motion, photons, electrons and atoms, force systems and equilibrium, work and energy applications, dynamics of rotational motion, fluid dynamics, heat and thermodynamics, periodic motion and wave phenomena, electricity and magnetism
3. Plan, conduct and document experiments performed in the laboratory on ? measurements and uncertainties, acceleration due to gravity, coefficients of friction, standing waves, spectral line analysis.
4. Interpret the results of experiments against the theory including the estimation of experimental uncertainties.

Subject Content

Units and Vectors
Linear and circular motion
Photons, electrons and atoms
Force systems and equilibrium
Work and energy applications
Dynamics of rotational motion
Fluid dynamics
Heat and thermodynamics
Periodic motion and wave phenomena
Electricity and magnetism

Assessment

The following table summarises the standard assessment tasks for this subject. Please note this is a guide only. Assessment tasks are regularly updated, where there is a difference your Learning Guide takes precedence.

Type	Length	Percent	Threshold	Individual/ Group Task	Mandatory
Quiz	30 mins	10	N	Individual	N
Practical	2 hour	25	N	Individual	N
Applied Project	Model+ 600 words	25	N	Group	N
End-of-session Exam	90 min	40	N	Individual	N

Prescribed Texts

- Young, HD, Freedman, RA and Bhathal, R 2010. Value Pack University Physics plus Mastering Physics with eBook, Pearson Australia

Teaching Periods

Quarter 2 (2025)

Penrith (Kingswood)

Hybrid

Subject Contact Upeka Kuruppu (https://directory.westernsydney.edu.au/search/name/Upeka Kuruppu/)

View timetable (https://classregistration.westernsydney.edu.au/odd/timetable/?subject_code=ENGR1012_25-Q2_KW_3#subjects)