



## AIMS

Learning about and working in physics gives people an understanding of the processes that direct the universe and the world, so that they may appreciate and respect them. Through exploring the processes that shape the universe, physicists debate and advance understandings of its workings and of the ways in which actions may affect the future of the world. In Physics, students can engage with the work of classical and modern physicists and to join in and/or initiate debates about how physics affects their own lives, society, and the environment.



## LEARNING OUTCOMES

After successfully completing this subject students should be able to:

- Demonstrate and apply knowledge and understanding of physics to a range of applications and problems.
- Solve a variety of problems in physics.
- Use the terminology and notation of physics correctly.
- Communicate knowledge and understanding of the ideas, concepts and information of physics effectively, using appropriate physics terms and conventions.
- Obtain, select, analyse, and evaluate the evidence of physics from a variety of different sources, and present informed conclusions or decisions on contemporary physics applications.
- Undertake and report on practical activities.
- Identify and formulate questions, hypotheses, concepts, and purposes that guide investigations in physics.
- Conduct collaborative and individual investigations in physics, using appropriate apparatus and safe working practices and by observing, recording, and interpreting the phenomena of physics.
- Represent, analyse, interpret, and evaluate investigations in physics through the use of technology and numeracy skills.

## PREREQUISITES AND ASSUMED KNOWLEDGE

Students should have completed Physics study to a Year 11 equivalent. It is possible for students to complete this course without taking Physics prior, with the understanding that outside study and hard work is required to do so.

It is assumed that student have a basic understanding of geometry, trigonometry and algebra.

## SUBJECT CONTENT

WEEK	TOPIC AND ASSESSMENT SCHEDULE
1	Orientation week
2	Introductory physics
3 - 4	Motion in 1 dimension
5 - 6	Forces
7 - 8	Work, energy and power
9 - 10	Momentum
11	Projectile motion
12	Uniform circular motion and gravitation
13 - 14	Exploring physics research: project
15 - 16	Electric fields
19 - 20	Magnetic fields
21 - 23	Wave theory
24 - 25	Physical optics
26 - 27	Atomic physics
28 - 32	Quantum optics
33 - 35	Nuclear physics
36 - 30	Revision and exams
40	Graduation



## ASSESSMENT

General weightings for each assessment item are outlined below.

ASSESSMENT ITEM	WEIGHTING
Practicals	15%
Tests	30%
Investigation	10%
Assignments	15%
Mid-year examination	15%
Final examination	15%