

Physics

2 units for each of Preliminary and HSC
 Board Developed Course
 Exclusions: Nil

Course Description:

The Physics Stage 6 Syllabus involves the study of matter and its motion through space and time, along with related concepts that include energy and force. Physics deals with the study of phenomena on scales of space and time – from nuclear particles and their interactions up to the size and age of the Universe. This allows students to better understand the physical world and how it works, appreciate the uniqueness of the Universe, and participate in navigating and influencing the future.

The problem-solving nature of physics further develops students' Working Scientifically skills by focusing on the exploration of models and the analysis of theories and laws, which promotes an understanding of the connectedness of seemingly dissimilar phenomena.

Students who study physics are encouraged to use observations to develop quantitative models of real-world problems and derive relationships between variables. They are required to engage in solving equations based on these models, make predictions, and analyse the interconnectedness of physical entities.

The Physics course builds on students' knowledge and skills developed in the Science Stage 5 course and help them develop a greater understanding of physics as a foundation for undertaking post-school studies in a wide range of Science, Technology, Engineering and Mathematics (STEM) fields. A knowledge and understanding of physics often provides the unifying link between interdisciplinary studies.

Main Topics Covered:

Preliminary Course

- Working Scientifically Skills
- Kinematics
- Dynamics
- Waves and Thermodynamics
- Electricity and Magnetism

HSC Course

- Working Scientifically Skills
- Advanced Mechanics
- Electromagnetism
- The Nature of Light
- From the Universe to the Atom

Particular Course Requirements:

- Students are provided with 15 hours of course time for Depth Studies in both Year 11 and Year 12. During this time students may undertake an investigation/activity that allows for the further development of one or more scientific concepts. A Depth Study may be one investigation/activity or a series of investigations/activities. Depth Studies may be included in one module or across several modules.
- Practical investigations are an essential part of the Year 11 and Year 12 courses and must occupy a minimum of 35 hours of course time each year.