

Course: **PHYSICS**

2 units for each of Preliminary and HSC Board Developed Course



Exclusions: Science Preliminary

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.

The study of physics provides the foundation knowledge and skills required to support participation in a range of careers. It is a discipline that utilises innovative and creative thinking to address new challenges, such as sustainability, energy efficiency and the creation of new materials.

Preliminary Course

		Modules	Indicative hours	Depth studies
Year 11 course (120 hours)	Working Scientifically Skills	Module 1 Kinematics	60	*15 hours in Modules 1–4
		Module 2 Dynamics		
		Module 3 Waves and Thermodynamics	60	
		Module 4 Electricity and Magnetism		

HSC Course

		Modules	Indicative hours	Depth studies
Year 12 course (120 hours)	Working Scientifically Skills	Module 5 Advanced Mechanics	60	*15 hours in Modules 5–8
		Module 6 Electromagnetism		
		Module 7 The Nature of Light	60	
		Module 8 From the Universe to the Atom		

*15 hours must be allocated to depth studies within the 120 indicative course hours.