PHYSICS

The following provides an overview of the content of the 2 Unit Physics Course.

Preliminary Course	HSC Course
Core • The World Communicates • Electrical Energy in the Home • Moving About • The Cosmic Engine.	**Core** • Space • Motors and Generators • From Ideas to Implementation **Option** (Students study ONE only) • Geophysics • Medical Physics • Astrophysics • From Quanta to Quarks • The Age of Silicone

Physics in Science Stage 6 provides students with a contemporary and coherent understanding of energy, matter, and their interrelationships. It focuses on investigating natural phenomena and then applying patterns, models (including mathematical ones), principles, theories and laws to explain the physical behaviour of the universe. It uses an understanding of simple systems (single particles and pairs of particles) to make predictions about a range of objects from sub-atomic particles to the entire universe and aims to reveal the simplicity underlying complexity.

The study of physics relies on the understanding and application of a small number of basic laws and principles that govern the microscopic and macroscopic worlds. The study of physics provides students with an understanding of systems that is the basis of the development of technological applications. The interplay between concepts and technological and societal impacts is embodied in the history and philosophy of science and forms a continuum relating our past to our future.

Physics Stage 6 draws upon and builds on the knowledge and understanding, skills and values and attitudes developed in Science Stages 4–5. It further develops students' understanding of science as a continually developing body of knowledge, the interdisciplinary nature of science, the role of experiment in deciding between competing theories, the provisional nature of scientific explanations, the complex relationship between evidence and ideas and the impact of science on society.

The study of physics involves the students working individually and with others in active, practical, field and interactive media experiences that are related to the theoretical concepts considered in the course. It is expected that students studying Physics Stage 6 will apply investigative and problem-solving skills, effectively communicate the theoretical concepts considered in the course and appreciate the contribution that a study of physics makes to our understanding of the world.

The Physics Stage 6 course is designed for those students who have a substantial achievement level based on the Science Stages 4–5 course performance descriptors. The subject matter of the Physics course recognises the different needs and interests of students by providing a structure that builds upon the foundations laid in Stage 5 yet recognises that students entering Stage 6 have a wide range of abilities, circumstances and expectations.