Physics

Physics 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 from the size of 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.

Who should choose to study Physics?

Students who are likely to succeed in Physics will have demonstrated, at least, an overall high achievement level in their Stage 5 Science course. **It is highly recommended that Physics students also study Mathematics Advanced or Mathematics Extension courses** as students are required to solve equations based on models, make predictions, and analyse the interconnectedness of physical entities. Students who study Physics are encouraged to use observations to develop quantitative models of real-world problems and derive relationships between variables.

Studying the HSC Physics course may lead to a broad range of tertiary study and career options in the scientific, industrial, communication and engineering fields. It also provides a sound base of scientific understanding for living and working in our world today. Physics is a discipline that utilises innovative and creative thinking to address new challenges, such as sustainability, energy efficiency and the creation of new materials.

Course Content

The Year 11 and Year 12 courses each comprise four modules.

Year 11

- Module 1: Kinematics
- Module 2: Dynamics
- Module 3: Waves and Thermodynamics
- Module 4: Electricity and Magnetism

Year 12

- Module 5: Advanced Mechanics
- Module 6: Electromagnetism
- Module 7: The Nature of Light
- Module 8: From the Universe to the Atom

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. It promotes an understanding of the connectedness of seemingly dissimilar phenomena.

See the NESA Physics syllabus on the website below for more information. https://educationstandards.nsw.edu.au/wps/portal/nesa/11-12/stage-6-learning-areas/stage-6-science/physics-2017