Physics

The following contains a description of the course we offer to students at St Marys Senior High. It is intended as a guide to help you select your subjects and you should read it carefully.

Please note:

- The details given represent the way that the course is delivered at St Marys Senior High and may involve different choices from the way other schools might operate the same course.
- Classes can only be formed where sufficient students select the particular course. The fact that a course is listed here is not a commitment to run the course in a particular year.
- The arrangements for particular courses are subject to change for a variety of reasons.
- HSC students may elect to take extension courses which we offer in English, French, History, Japanese, Mathematics and Music.

Physics - Course Details

Units	Type	ATAR	Faculty Teaching This Course
2	Board Developed Course – Examinable at the HSC, marks can be used to count towards an ATAR	A – Counts towards an ATAR with no restrictions	Science

What will I be doing in this course?

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 Stage 6 Physics 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.
Students will undertake at least one Depth Study in both Year 11 and Year 12. Depth studies provide opportunities for students to pursue their interests in Physics, acquire a depth of understanding, and take responsibility for their own learning. Depth studies

promote differentiation and engagement, and support all forms of assessment, including assessment for, as and of learning. Depth studies allow for differentiation of a range of working scientifically skills.

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

Year 12 Course Structure and Requirements				
Year 12 course **(120 hours)**	**Working Scientifically Skills**	**Modules**	**Indicative hours**	**Depth studies**
		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.

What should I be able to do at the end of this course?

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. This course will prepare students for further tertiary studies in Science and Engineering.

How will I be assessed in this course?

Requirements for Practical Investigations

Scientific investigations include both practical investigations and secondary-sourced investigations. Practical investigations are an essential part of the Year 11 and Year 12 course and must occupy a minimum of 35 hours of course time for each year including time allocated to practical investigations in depth studies.

Practical investigations include:

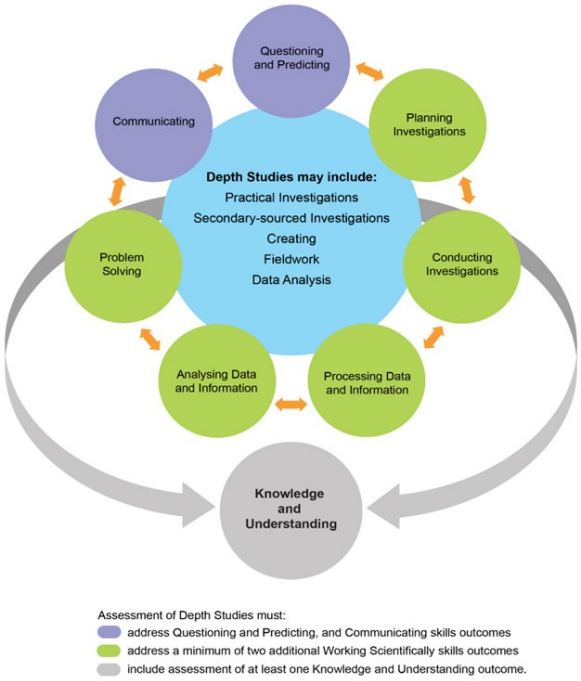
- undertaking laboratory experiments, including the use of appropriate digital technologies
- fieldwork

Secondary-sourced investigations include:

- locating and accessing a wide range of secondary data and/or information

Requirements for Depth Studies

- A minimum of 15 hours of in-class time is allocated in both Year 11 and Year 12.
- At least one depth study must be included in both Year 11 and Year 12.



The two Working Scientifically outcomes of Questioning and Predicting and Communicating must be addressed in both Year 11 and Year 12.

How will this course help me in the future?

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.

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thinking to address new challenges, such as sustainability, energy efficiency and the creation of new materials.
For more information, please visit the NESA website on the webpage below

The course is designed for students who have attained a high level of achievement in Science and wish to pursue further study in Science, Technology, Engineering or Mathematics (STEM) based courses offered at the tertiary level.