

## Physics ATAR

<b>Year 11 Course Code</b>	AEPHY
<b>Year 12 Course Code</b>	ATPHY
<b>Highly Recommended</b>	<b>Year 11:</b> A or B grade throughout the year in Year 10 Science. 75% in both semester Science examinations. 90% attendance in Year 10. Physics also requires a strong performance in Year 10 Mathematics. OLNA Category 3. <b>Recommendation by Head of Learning Area.</b>
	<b>Year 12:</b> A or B grade in Year 11 Physics
<b>Cost</b>	\$70.00 (cost is approximate – subject to change)

In the Physics ATAR course students will learn how energy and energy transformations can shape the environment from the small scale, in quantum leaps inside an atom's electron cloud, through the human scale, in vehicles and the human body, to the large scale, in interactions between galaxies.

Students have opportunities to develop their investigative skills and use analytical thinking to explain and predict physical phenomena. Students plan and conduct investigations to answer a range of questions, collect and interpret data and observations, and communicate their findings in an appropriate format. Problem-solving and using evidence to make and justify conclusions are transferable skills that are developed in this course.

### Year 11 Course Structure

Unit 1 - Thermal, nuclear and electrical physics

In this unit, students explore the ways physics is used to describe, explain and predict the energy transfers and transformations that are pivotal to modern industrial societies.

Unit 2 - Linear motion and waves

Students develop an understanding of motion and waves which can be used to describe, explain and predict a wide range of phenomena. Students describe linear motion in terms of position and time data, and examine the relationships between force, momentum and energy for interactions in one dimension.

### Year 12 Course Structure

Unit 3 - Gravity and electromagnetism

In this unit, students develop a deeper understanding of motion and its causes by using Newton's Laws of Motion and the gravitational field model to analyse motion on inclined planes, the motion of projectiles, and satellite motion.

Unit 4 - Revolutions in modern physics

In this unit, students examine observations of relative motion, light and matter that could not be explained by existing theories, and investigate how the shortcomings of existing theories led to the development of the special theory of relativity and the quantum theory of light and matter.