

PHYSICS

A Level Course

Description

The physics A-Level is a fulfilling, challenging, yet accessible course which will develop and extend your knowledge and understanding of the physical world. There is a heavy focus on problem solving, and of developing intuition and independence in approaching unfamiliar situations.

“Physics at Holy Family Sixth Form really opened my eyes more than any other subject, and introduced me to a new, more intricate way of understanding the world around us (and beyond!). The course covers all the topics you most likely pondered as a child, and really strengthens your core mathematical / scientific abilities which are essential, whatever field you wish to pursue. Thanks to the hard work of the science department, and the interest the physics course gave me, I’m currently studying astrophysics at the University of Sussex.” – Tim Slack

Entry Requirements

GCSE Average: 4.8. GCSE Grade 7 in Maths, Grade 5 in English, Grade 77 in GCSE Science or Grade 7 in single Physics.



Progression

Core skills developed in an A Level physics course are numeracy, analytical thinking, and problem solving. It is therefore highly regarded for any subject with a mathematical component, such as accounting, economics, and of course any of the physical and life sciences. The most popular career path following physics degrees is into banking, although many different fields of modern scientific research or technology innovation require physics graduates. There are very few doors that would be closed to you following a physics degree, and a physics A-Level is a well-regarded qualification by employers and by universities, regardless of which degree or profession you intend to pursue.



Course Details

The course is broken down into 10 broad sections, 5 of which are covered during each of the two years of the A-Level. The sections covered in the first year are:

'Matter and Radiation' (which comprises the first really *new* material compared to GCSE – modern particle physics and quantum phenomena), 'Waves and Optics' (covering wave phenomena, lasers, interference etc.), 'Mechanics and Materials', which is an extension of the material from GCSE covering forces, energy and momentum, and 'Electricity', where you learn in more detail the workings of electrical currents and circuits. The final first-year section is 'Measurements and their Errors' and is related to the practical aspects of the course.

Year 2 of the course develops more new material and extends some of the year 1 content. The sections covered are 'Further Mechanics and Thermal Physics', 'Fields', 'Nuclear Physics', and an optional module. The optional module is decided on by class vote, but students usually choose either 'astrophysics' or 'turning points', the latter of which is a course focussed on the new developments in physics of the 20th century – quantum mechanics, and Einstein's special relativity.

The two remaining sections are both relating to the practical aspect of the course, and are focussed on developing solid experimental and analytic skills for use in a science laboratory. As you would expect the course has a heavy focus on practical work, and you will be required to complete 12 'endorsed practicals', experiments which are core to the main course content and on which you can be assessed in the final exams. Of course, we will undertake many additional practicals over the course of the A-Level!

Your overall grade is based **only** on your performance in three 2-hour exams, taken at the end of the second year. The practical component of the course is simply 'pass/fail' and is awarded based on the judgement of your teacher.



Further Information

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Examination board: AQA

www.aqa.org.uk