Course Information

The AS Level is divided into four modules.

Module 1 – Development of practical skills in physics

Practical skills are embedded throughout all the content of this specification. Learners will be required to develop a range of practical skills throughout their course in preparation for the written examinations.

•Module 2 – Foundations of physics

The aim of this module is to introduce important conventions and ideas that permeate the fabric of physics. Understanding of physical quantities, S.I. units, scalars and vectors helps physicists to effectively communicate their ideas within the scientific community

•Module 3 – Forces and motion

In this module, learners will learn how to model the motion of objects using mathematics, understand the effect forces have on objects, learn about the important connection between force and energy, appreciate how forces cause deformation and understand the importance of Newton's laws of motion.

•Module 4 – Electrons, waves and photons

The aim of this module is to ultimately introduce key ideas of quantum physics. Electromagnetic waves (e.g. light) have a dual nature. They exhibit both wave and particle-like behaviour. The wave–particle dual nature is also found to be characteristic of all particles (e.g. electrons).

Two further modules will be completed to gain the full A Level qualification. These are:

•Module 5 – Newtonian world and astrophysics

The aim of this module is to show the impact Newtonian mechanics has on physics. The microscopic motion of atoms can be modelled using Newton's laws and hence provide us with an understanding of macroscopic quantities such as pressure and temperature. Newton's law of gravitation can be used to predict the motion of planets and distant galaxies. In the final section we explore the intricacies of stars and the expansion of the Universe by analysing the electromagnetic radiation from space.

•Module 6 – Particles and medical physics

This section introduces the basic properties of capacitors and how they are used in electrical circuits. The use of capacitors as a source of electrical energy is then developed. This section introduces the mathematics of exponential decay, which is also required for the decay of radioactive nuclei in **6.4**.

Assessment:

At AS Level:
AS Papers 1 and 2 can assess any content from Modules 1 to 4.

Paper 1= Breadth in Physics

Paper 2= Depth in Physics

At A Level:
A Level Paper 1 assesses the content from Modules 1, 2, 3 and 5.

A Level Paper 2 assesses the content from Modules 1, 2, 4 and 6.

A Level Paper 3 assesses the content from Modules 1 to 6.

All Exams are taken in May or June

The Practical Endorsement:

For the full A level certification, 12 Practical activities will be completed over the two years.

The written exam may include questions related to any of these practical's.

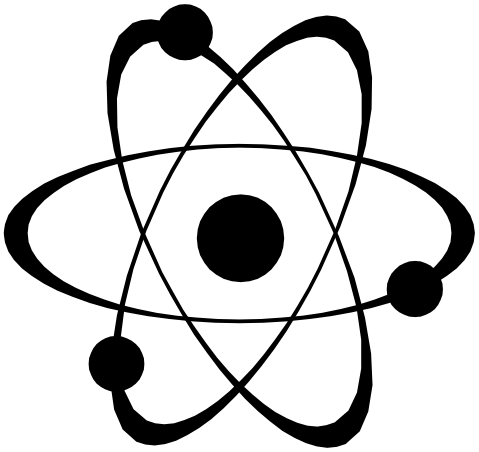
To take this course, students will need:

At least a grade B/6, in Core Science and Additional Science for both coursework and exams and a recommendation from subject teachers to follow this course.

What could I go on to do after the course?

Physics applications, like the career opportunities, are extremely varied. Employers today actively seek out people who can prove their ability to think logically, understand complex ideas and apply them to the real world. If you want a career in science, the media, education, business or a host of other fields, physics can help give you the edge. Some physicists tackle the application of physical ideas to industrial and engineering problems. Physics graduates also find employment in medicine, computing and finance.

The co-teachable AS and A level Physics specification enables students to build skills and confidence together whilst studying one of the most sought after A Levels. All students will complete a practical portfolio which becomes the practical endorsement at A level but also develops practical knowledge which is now incorporated into the examinations at both AS and A level.



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Level 3

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Physics

A Level

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