



A Level Physics A

Key contact: Mr R Barry (Head of Physics)
Exam Board: OCR

Overview of the course:

OCR Physics A is an innovative Advanced GCE course, reflecting Physics as it is practised and used today. It covers everything from the tiniest components of matter, quarks and gluons, to the largest cosmological structures in the universe, super-clusters and filaments!

The course provides a satisfying experience for the student who chooses to take Physics as part of a broad Post-16 curriculum. At the end of the course students should know more of what Physics is about, and its place in the world. For those who wish to, the Advanced GCE qualification enables the student to go on to degree level studies at university, particularly Physics or Engineering, and at the same time provides an interesting and stimulating experience for the student who does not pursue the subject further.

This Physics course provides a distinctive structure, within which students learn both about fundamental physical concepts, and about Physics in everyday and technological settings. It shows the usefulness of the subject, and illustrates the impact that discoveries in Physics have had on the way people live.

How is this Physics Syllabus different?

OCR Physics A is designed to enable students to develop a deep understanding of a variety of Physics concepts and to link these areas together, whilst also enhancing their practical skills. They are provided with opportunities to apply their knowledge to solve problems on topics ranging from sub-atomic particles to the entire universe.

Students will also develop an understanding of the importance of Science to our society, including its contribution to the success of the economy and the processes by which society makes decisions about scientific issues.

At Ivybridge Community College we incorporate study enrichment opportunities such as guest speakers and events when we can, and visiting Alton Towers during the Force and Motion topic.

It is not necessary to study Mathematics, but many students find this a good combination when considering future careers.

What will you study?

Year 1:

Each module is split up into smaller topics which focus on a theme. These include:

- experimental and analytical skills
- forces in action
- materials
- electricity
- waves
- quantum physics.

Year 2:

- thermal physics
- circular motion
- oscillations
- gravitational fields
- astrophysics and cosmology
- capacitors
- electric fields
- electromagnetism
- nuclear and particle physics
- medical imaging.

Assessment

Assessment is by three written papers and a practical endorsement.

Possible career path?

Physics at A Level is extremely useful when looking at potential careers. Few degree courses are ruled out and far more are opened up to you. Traditionally, physicists work in communications, computing, engineering, geophysics, industry, material sciences, medical physics, meteorology, architecture and even education. Many students of Physics, however, use it as an academic qualification for other careers, for example, accountancy or medicine.

As a Physicist you try to understand the world in terms of relatively simple concepts and models. You learn to solve problems and provide explanations. You need to be good at communicating, to have an enquiring mind and enjoy a practical and intellectual challenge. Indeed, the skills you acquire during the study of Physics are valued by employers in all areas.

Entry requirements

Five GCSEs Grade 9-6, including English, **and** Mathematics **and** Physics to Grade 6.