

Physics tells us stories about how the world works and leads to exciting technologies that can improve our lives.



Are you interested in:

- problem solving
- an intellectual challenge
- experimental work
- improving your ICT skills

Leading to a career in:

- Physics
- Engineering
- Medicine
- Architecture
- The City

Teacher to contact:

Mr J Gould

Exam Board: OCR Physics B

A-level

This innovative course reflects how Physics is practised and used today and looks forward to possible future developments in the subject. You will be supported by having a **course book**, a dedicated **course website** and **online assessment** materials.

In lessons, you will learn through a wide variety of activities including practical work, discussions, problem solving tasks, internet research and computer modelling. You will be guided and supported through the transition to the much more independent learning that you will need at Advanced Level. Your mathematical skills will improve with lots of practice of calculations and lots of quantitative work.

You will have many opportunities for extracurricular enhancement. You might like the Engineering Education Scheme, or if you are interested in High Energy Physics, you might want to make or use Cosmic Ray and other particle detectors. Maybe you'd like to take part in the University's ScienceXchange or School Zone events. You will be encouraged to attend Cambridge Physics Centre lectures at the Cavendish Laboratory.

You will begin to make links between different areas of physics and you should begin to see that physics is defined more by its approach.

This course is taught through six modules

Module 1 – Development of Practical Skills

These skills will be assessed through the 'Practical Endorsement' and through the 'Practical Skills in Physics' paper.

Module 2 – Fundamental Data Analysis

Fundamental, experimental and analytical skills. These skills will be assessed through the 'Practical Skills in Physics' paper

Year 12:

Module 3 – Physics in Action

- Imaging and signalling
- Sensing
- Mechanical properties of materials.

Module 4 – Understanding Processes

- Waves and quantum behaviour – explores wave phenomena, and introduces quantum phenomena involving photons and electrons.
- Space, time and motion – classical mechanics, including Newton's laws and equations of motion; developing vectors to describe forces and their effects.

Year 13:

Module 5 – Rise and Fall of the Clockwork Universe

- Creating models
- Out into space
- Our place in the universe
- Matter: very simple
- Matter: hot or cold.

Module 6 – Field and Particle Physics

- Electromagnetism
- Charge and field
- Probing deep into matter
- Ionising radiation and risk.



Assessment

	Paper Title	Exam Length	% of Grade	Paper format
Paper 1	Fundamentals of Advancing Physics	2h 15m	41%	Section A: multiple choice questions, 30 marks Section B: structured questions, covering theory and practical skills, 80 marks.
Paper 2	Scientific Literacy in Advancing Physics	2h 15m	37%	This paper includes structured questions and extended response questions covering theory and practical skills. The paper includes questions on an Advance Notice article.
Paper 3	Practical Skills in Advancing Physics	1h 30m	22%	This paper includes structured questions, calculations and extended response questions focusing on practical contexts.

Practical Endorsement	non-exam assessment	Minimum of 12 practical activities to be completed across the 2 year course. Students must keep a practical log book / portfolio of these tasks. These tasks will be assessed by your teacher against the Common Practical Assessment Criteria.
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