



A LEVEL PHYSICS EXAM BOARD: OCR

SUBJECT AREA OVERVIEW

Physics is the observation of everything in the universe around us and the attempted explanation of how it works.

This course encourages students to develop their enthusiasm for further study and careers in Physics and Engineering. Additionally, to appreciate how society makes decisions about scientific issues and how Physics contributes to the success of the economy and society. Our A level course has a content-led approach. A flexible approach where the specification is divided into topics, each covering different key concepts of physics. As learners progress through the course they will build on their knowledge of the laws of Physics, applying their understanding to solve problems on topics ranging from sub-atomic particles to the entire universe. For A level only, the Practical Endorsement will also support the development of practical skills.

A level in Physics aims to encourage learners to:

develop essential knowledge and understanding of different areas of the subject and how they relate to each other

- develop and demonstrate a deep appreciation of the skills, knowledge and understanding of scientific methods
- develop competence and confidence in a variety of practical, mathematical and problem-solving skills

Course Content

- Module 1 – Development of practical skills in physics
 - 1.1 Practical skills assessed in a written examination
 - 1.2 Practical skills assessed in the practical endorsement
- Module 2 – Foundations of physics
 - 2.1 Physical quantities and units
 - 2.2 Making measurements and analysing data
 - 2.3 Nature of quantities
- Module 3 – Forces and motion
 - 3.1 Motion
 - 3.2 Forces in action
 - 3.3 Work, energy and power
 - 3.4 Materials

3.5 Newton's laws of motion and momentum

- Module 4 – Electrons, waves and photons

4.1 Charge and current

4.2 Energy, power and resistance

4.3 Electrical circuits

4.4 Waves

4.5 Quantum physics

- Module 5 – Newtonian world and astrophysics

5.1 Thermal physics

5.2 Circular motion

5.3 Oscillations

5.4 Gravitational fields

5.5 Astrophysics and cosmology

- Module 6 – Particles and medical physics

6.1 Capacitors

6.2 Electric fields

6.3 Electromagnetism

6.4 Nuclear and particle physics

6.5 Medical imaging

Assessment

- Modelling Physics (paper 1) 37% of total from modules 1, 2, 3 and 5

100 marks, 2 hours 15 minutes, written paper

Section A – 15 multiple choice questions (15 marks)

Section B – short answer and extended response questions (85 marks)

- Exploring physics (paper 2) 37% of total from modules 1, 2, 4 and 6

100 marks, 2 hours 15 minutes, written paper

Section A – 15 multiple choice questions (15 marks)

Section B – short answer and extended response questions (85 marks)

- Unified physics (paper 3) 26% of total from all modules (1 to 6)

70 marks, 1 hour 30 minutes, written paper

Short answer and extended response questions

- Practical Endorsement in Physics (04)

Non exam assessment – reported separately

There is a wide variety of opportunities to assess the 12 Practical Activity Groups embedded throughout the course. Practical endorsement is essential to pass the course.



For further information: www.ocr.org.uk/qualifications/as-and-a-level/physics-a-h156-h556-from-2015/