

Guilsborough Academy Sixth Form

KS5 CURRICULUM

Course Title: **Physics**

Examination Board: OCR



Entry Requirements: With a grade 7 in Maths, need a grade B in Physics and Chemistry and a grade C in Biology OR a BB in Double Science OR with a grade 6 in Maths, need a grade A in Physics, B in Chemistry and C in Biology or AB in Double Science

Must take either A Level Mathematics or follow the maths booster course.

Assessment:

AS Course:

- Two written examination papers:

A Level Course:

- Three written examination papers (+ Practical endorsement)

Is This Course Right For Me?

Physics – a content-led approach. This course offers a flexible approach to Physics where the specification is divided into topics, each covering different key concepts of physics. As students' 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.

OCR's AS Level in Physics A specification 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
- develop their interest in and enthusiasm for the subject, including developing an interest in further study and careers associated with the subject
- understand how society makes decisions about scientific issues and how the sciences

Unit Contents:

AS and A Level

All exams can assess content from all modules.

Module 1 – Development of practical skills in physics 1.1 Practical skills assessed in a written examination

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

Note: Module 1 of the specification content relates to the practical skills learners are expected to gain throughout the course, which are assessed throughout the written examinations.

Practical activities are embedded within the learning outcomes of the course to encourage practical activities in the classroom, enhancing learners' understanding of physics theory and practical skills.

A Level Only modules:

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

Progression:

The specification has been designed to be co-teachable with the A Level in Physics A qualification. Learners studying the A level study modules 1 to 4 and then continue with the A level only modules 5 and 6 in year 13. The internally assessed Practical Endorsement skills also form part of the full A level.

Example of university courses and grades required

- **BSc Medical Physics, University of Central London (UCL):** A-level entry requirements are in the range AAA-ABB, to include Mathematics (grade A preferred) and Physics, usually at least one of them at grade A.
- **Environmental Science (BSc) or Electronic/Mechanical Engineering (BEng), Northampton University:** A-Level entry requirements approximately BBC (280 Ucas Points)
This is to include A Level in Maths for engineering however Maths is not required for environmental science.
- **Mechanical Engineering (BEng), Liverpool University:** Typically ABB at A-Level including Mathematics plus another Science subject.

Further Information Contact:

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