# Physics A-Level Exam Board: AQA

**Summary of course content Physics**

| Qualification | Modules studied | |
|---|---|---|
| **Physics Year 1** | Measurements and their errors | Use of SI (International System of Units) and their prefixes<br>Limitations of physical measurement<br>Estimation of physical quantities |
| | Particles and radiation | What makes up the proton and the neutron<br>How do particles interact with one another<br>Collisions of electrons with atoms |
| | Waves | Progressive waves<br>How do waves interact with each other<br>Diffraction of light |
| | Mechanics and energy | The projectile path of a thrown object<br>Newton's laws of motion |
| | Electricity | Current/voltage characteristics and Ohm's Law<br>Advanced circuits and diodes<br>Electromotive force and internal resistance |

**Summary of assessment scheme**
**Year 1 Physics Exams**

| Content | Assessment | Questions |
|---|---|---|
| **Paper 1**<br>• All Year 1 topics | Written exam: 1 hour 30 minutes<br>• 70 marks<br>• 50% of AS | • 70 marks: questions divided into section on each topic |
| **Paper 2**<br>• Practical skills<br>• Data analysis<br>• All AS topics | Written exam: 1 hour 30 minutes<br>• 70 marks<br>• 50% of AS | • 20 marks: questions on practical skills and data analysis<br>• 20 marks: questions from across Year 1 topics<br>• 30 marks: multiple choice questions |

## Summary of course content Physics A-Level

| Qualification | Modules studied | |
|---|---|---|
| **A-level Physics**<br><br>Linear assessment, with all exams at the end of the 2 year course.<br><br>The Year 1 Physics grade no longer contributes to this qualification. | Further mechanics and thermal physics | **Year 1 content plus**:<br><br>Circular motion, centripetal and centrifugal force<br>Thermal energy transfer and specific heat capacity<br>The gas laws and molecular kinetic theory model |
| | Fields | **Year 1 content plus:**<br><br>Newton's law of gravitation and how planets interact<br>Orbits of planets and satellites<br>Electric fields<br>More on magnetic fields |
| | Nuclear physics | **Year 1 content plus:**<br><br>Evidence for the nucleus<br>Radioactive decay and ½ life<br>Nuclear instability and the reasons for radioactive decay |
| | Optional topic | **Any one of the following:**<br>Astrophysics<br>Medical physics<br>Engineering physics<br>Turning points in physics Electronics |

## A-Level Physics Exams

| Content | Assessment | Questions |
|---|---|---|
| **Paper 1**<br>• All Year 1 topics<br>• Periodic motion | Written exam: 2 hours<br>• 85 marks<br>• 34% of A-level | 60 marks: a mixture of short and long answer questions<br>25 marks: multiple choice questions |
| **Paper 2**<br>• All A2 topics (excluding optional topic) | Written exam: 2 hours<br>• 85 marks<br>• 34% of A-level | 60 marks: a mixture of short and long answer questions<br>25 marks: multiple choice questions |

| | | |
|---|---|---|
| **Paper 3**<br>• Practical skills<br>• Data analysis<br>• Optional topic | Written exam: 2 hours<br>• 80 marks<br>• 32% of A-level | 45 marks: questions on practical experiments and data analysis 35 marks: questions on optional topic |

**Why you should consider studying Physics in the 6th Form**

The main advantages are:

- Physics is one of the eight *facilitating* subjects. Russell Group Universities, suggest you take at least one of these subjects at A level.
- Physics is highly regarded by employers and is useful for careers in medicine, engineering, dentistry, veterinary science and a broad range of other careers.
  Physics is taught with a high emphasis on practical skills which aim to answer some of the most fundamental questions of the Universe.

The study of Physics ranges from the smallest to the largest things within the Universe and everything in between. It aims to answer the truly fundamental questions as well as some of the most pressing issues of the real world such as those relating transport, energy and environmental change. There is also several questions posed which are yet to be answered from scientists worldwide giving students a real opportunity to delve into the real life of a scientist and the problems they face on a day-to-day basis. The privilege of an optional topic gives you as a student more free will in the course and the content that you learn.

**Frequently asked questions**

**Do I need to have GCSE science qualifications?**
You will need to have either gained 6 grades in Biology & Chemistry separate sciences at GCSE, with an 7 in Physics or two 7 grades in "Double Science" (Science A and additional science). Mathematics (higher) GCSE at a grade 6 or higher.

**Are there any other A-levels that would be useful to study with physics?**
There is an overlap of Physics with Mathematics and Chemistry at A-Level in both these areas. The mathematical content of physics increases from Year 1 to Year 2 and as such it would be useful to study mathematics with physics across both years.

**Is there lots of practical work?**
There is a large proportion of practical work within the physics syllabus with practical skills being part of the assessment at the end of both years. Practical work is built into lessons to allow students to uncover concepts for themselves the same way the scientists who discovered them did!

**What type of text books and other equipment will I need?**
The main text book is specifically designed by the exam board, awaiting details following the specification change. There is also a set of easy-to-read and understand notes provided for each lesson given as a booklet at the beginning of the course. Past examination papers are available to download from the AQA examinations website & revision guides will be suggested once they become available.

**How good is the teaching?**
*According to the Ofsted inspectors…..*

- "The teacher's subject knowledge and scholarly approach challenges students at a high level and leads to good understanding"
- "Very good discussions with students helps them to understand difficult ideas, and gives them the confidence to ask questions when they do not understand."

***D Browning, Physics***