Technical Information

A-level

A-level Course Title	Unit Code	Awarding Body
Physics A-level	7408	AQA

A-level Examinations:

Name	Content	Method of Assessment	Marks
Paper 1	Topics 1 – 6.1	Short and long answer questions	85
		25 Multiple choice questions	
Paper 2	Topics 6.2 – 8	Short and long answer questions	85
		25 Multiple choice questions	
Paper 3	Practical experiments and data analysis	45 marks on practical experiments and data analysis	80
	Topic 9	35 marks on Topic 9	

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Wakefield

Course Guide

A-level Physics

Physics

Background Knowledge and Qualifications

This course builds on the knowledge, understanding and practical skills that you have developed during your GCSE Science course.

You should have gained at least a grade 7 in Physics or a grade 7 in the Physics component of Double Award Science.

Course Description

In addition to the topics covered at GCSE, which are studied in greater depth, you will be introduced to some completely new areas of Physics. These different topics, Particle Physics for example, cover areas where great leaps of understanding have been made which have changed our boundaries of knowledge. If you study Physics you will discover answers to questions such as:

- What was so special about the new element Marie Curie discovered?
- How do we know that antimatter exists?
- Is an electron a particle or a wave?
- How do we detect an exoplanet?
- What does colour tell us about a star?
- What is a Quasar?
- How old is the Universe?

The course in Physics is suitable for anyone who has an interest in and enjoys Physics and wants to find out about how things work in the real world.

The specification has been specifically developed as a stepping stone to further study and will assist you to develop skills required by universities whatever course you choose to study. In particular the course helps you develop high levels of communication and numeracy skills, a logical approach to problem solving as well as many practical skills.

During the course students are given a variety of tasks to assist them in developing an understanding of the work and to achieve their potential. These range from worksheets to making their own notes based on explanations or discussions undertaken in lessons.

Students are encouraged to take responsibility for their own learning and to initiate any additional study they require to fully understand the material covered. Staff are always available to provide students with additional help and support.

Physics is fundamentally an experimental subject and practical work is carried out throughout the course and is undertaken both individually and while working with others. It is performed in step with the theory and thus acts as a means of enhancing the theoretical concepts as well as developing good practical skills.

Topics Covered

1 Measurements and their errors

2 Particles and Radiation
- Atomic structure
- Particle physics
- Photoelectric effect
- Atomic spectra

3 Waves
- Progressive and stationary waves
- Interference and diffraction
- Refraction

4 Mechanics and Materials
- Scalars and vectors
- Moments
- Forces and motion
- Momentum
- Work, energy and power
- Tensile stress and tensile strain
- The Young modulus

5 Current Electricity
- Charge, current and potential difference
- Resistance
- Resistivity
- Series and parallel circuits
- Emf and internal resistance

6.1 Periodic Motion
- Circular motion
- Simple harmonic motion

6.2 Thermal Physics
- Ideal gases
- Molecular kinetic theory

7 Fields and their consequences
- Electric fields
- Capacitance
- Gravitational fields
- Magnetic effects of currents

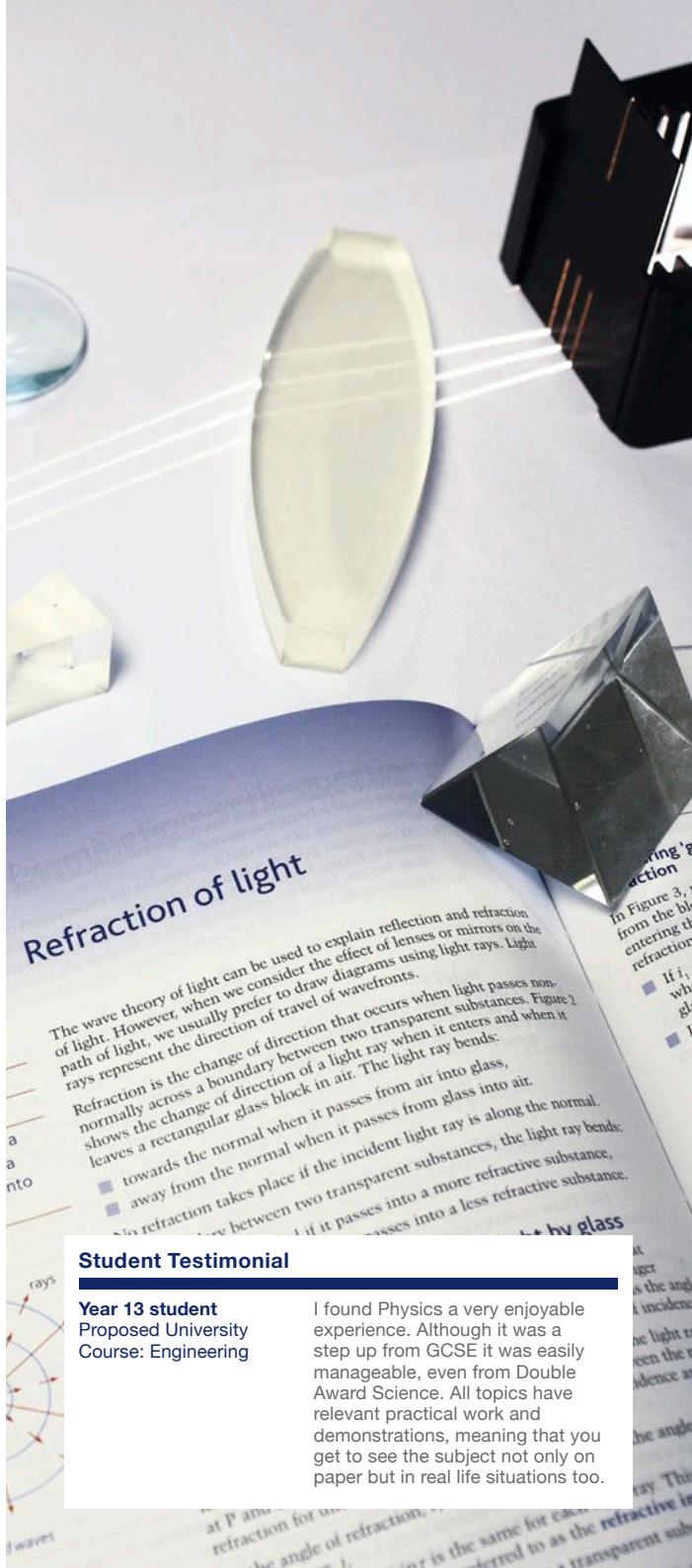
8 Nuclear Physics
- Radioactivity
- Stable and unstable states
- Nuclear radius

9 Astrophysics
- Telescopes
- Classification of stars
- Cosmology

In addition to the above topics at A-level there is an endorsement of practical skills that will be assessed during normal lessons which will lead to a “pass” recorded on students A-level certificate.

Use of Course and Qualification

Physics leads on to a wide range of courses and careers. Students regularly go on to study courses in Physics, various forms of Engineering, Dentistry, Medicine, Optometry and other Science related degrees. The communication, numeracy and problem solving skills you develop would also stand you in good stead as a preparation for non-scientific courses at university.



Student Testimonial

Year 13 student
Proposed University Course: Engineering

I found Physics a very enjoyable experience. Although it was a step up from GCSE it was easily manageable, even from Double Award Science. All topics have relevant practical work and demonstrations, meaning that you get to see the subject not only on paper but in real life situations too.