

# PHYSICS

## GCE A-Level

Subject Area	Qualification	Level	Awarding Body
Physics	GCE A-Level	Level 3	Edexcel

### Course Summary

The programme is designed for young people aged 16 – 19, where you will learn about the relevance of Physics to many different aspects of life such as sport, the confectionery industry and music. You will learn about the infinitesimally small world of quarks and leptons, study Astrophysics and Cosmology.

### How will I be assessed?

In the first year, units 1 and 2 are each assessed with a written examination paper of 1 hour 30 minutes duration, which will consist of multiple choice and structured questions. The unit 1 exam will be in January, and the unit 2 paper will be in June.

Unit 3 is a practical unit, assessed by means of an experiment that is founded on a physics based visit.

You will need to write a visit report, and then plan an experiment, which you will then carry out and write up. This coursework is internally marked and externally moderated by Edexcel.

In the second year, units 4 and 5 are each assessed with a written examination paper of 1 hour 35 minutes duration, which will consist of multiple choice and structured questions. The unit 4 exam will be in January, and the unit 5 paper will be in June.

Unit 6 is a coursework unit, where you will use your experience to plan an experiment, carry it out, record measurements, analyse your results and draw conclusions. It is internally marked and externally moderated by Edexcel.

### Entry Requirements

You will need to have passed GCSEs in Science and Maths at grade B or above. You will also need to have 3 further GCSEs at grade C or above, which must include English Language. In addition, you will need to attend a College interview, where your application will be discussed in more detail.

### How much time will I spend on the course?

You will spend 4.5 hours each week studying the subject, normally split into two teaching blocks. At least one of these sessions will be in the lab, to allow practical work.

You will be expected to spend at least 2 hours a week outside lessons on homework, further research or reading to consolidate your learning.

### How is the course taught?

In this course, there is a mixture of theoretical and practical work, with many examples of practical examples of the topic. The practical work will build up towards units 3 and 6, and is therefore an important part of your learning.

Notes from lessons are added to the College Intranet, on Moodle, to allow you to revisit materials after the lesson, and also if you need to catch up after illness or any other absence.

### Where is the Course taught?

The course is taught on the main Redditch campus, with at least one lesson each week in the dedicated Science labs.

### Who is this course suitable for?

This course is suitable for students who enjoy:

- learning about the world around us
- trying to explain why things behave the way they do
- experimental research
- problem solving

It is helpful (but not essential) to have a good understanding of maths, and an interest in how science is seen in everyday life.

### What materials do I have to provide?

Learners must be prepared to bring an A4 folder to all lessons to keep their work. They must also ensure that they bring paper, pens, pencil, ruler and calculator to all lessons.

Use of Moodle is encouraged, and so it would be useful if students have a memory stick for their electronic work.

## What are the mandatory modules or units?

### Advanced Subsidiary (AS)

#### • Unit 1: Physics on the Go

This unit involves the study of mechanics and materials. You will study topics taught in context, for example sports and the food production industry.

#### • Unit 2: Physics at Work

This unit involves the study of waves, electricity and the wave/particle nature of light. Several different contexts will be used to teach parts of this unit including music, medical physics, technology in space, solar cells and an historical study of the nature of light.

#### • Unit 3:

This is a coursework unit. It involves an experiment that is based on a physics-based visit or a case study of an application of physics. It is internally marked.

### Advanced Level (A2)

#### • Unit 4: Physics on the Move

This unit involves the study of further mechanics, electric and magnetic fields, and particle physics. As for AS, these will be placed in context, including a study of particle accelerators, such as CERN in Geneva.

#### • Unit 5: Physics for Creation to Collapse

This unit involves the study of thermal energy, nuclear decay, oscillations, astrophysics and cosmology. Contextual examples include space technology, medical physics and the construction of buildings in earthquake zones.

#### • Unit 6: Experimental Physics

This is a coursework unit. It requires that you plan an experiment, carry it out, record measurements, analyse your results and draw conclusions. It is internally marked.

## Are there any additional costs or specialist equipment required?

You will need to have a copy of the A level text books for this course, which can be loaned to you for a deposit of £5. This is fully refunded at the end of the course, when you return the books in good condition. We aim to have physics-related visits during the year, some of which are necessary for completion of the practical assessment. There may be a small cost associated with some of these visits, to cover entry costs for example, and you will be notified of these in advance.

\*You may be able to get help with the costs from the College's Learner Support Fund. More details are available from the Student Advice Guidance and Support team (01527) 572691.

## What can I do after this course?

You can apply to do a degree in a wide range of subjects, such as a three year BSc or four year MPhys degree. You might study pure Physics, or Physics combined with a range of other subjects including Medical Physics, Geophysics, Materials Science etc. Physics can also be accepted for other subjects, including Economics and Business related degrees, and is essential for many Engineering courses.

By studying Physics, you demonstrate that you have a logical, inquiring mind, a skill which is valued by both employers and university admissions tutors.

## What careers would this course be useful for?

Whether you have a physics related degree, or just an A level, your scientific background will make you suitable for many careers. Obvious progressions include engineering, communications design, and medicine, but you would also be in demand studying the environment, law and finance, or maybe even finding the elusive 'Higgs Boson' particle at CERN in Geneva !

## How do I apply / join this course?

You first need to complete an application form. You can find a form in the back of the Prospectus or you can call our Information Centre on (01527) 570020 and they will send you a form in the post. Alternatively you can complete the form on-line by visiting the College's website [www.ne-worcs.ac.uk](http://www.ne-worcs.ac.uk).

Once we have your form we will invite you to come into College and meet with a member of our teaching Team so you can ask any other questions you have. Usually at this meeting we will either offer you a place on the course you have applied for or, in some cases an alternative course.

## Can I get any financial support with the costs of study?

From September 2011, young people who need financial support to help them stay in Education or training after 16 can apply to NEW College for the new 16-19 Bursary Fund.

Those most in need will be eligible for a bursary of £1200 a year. This includes young people in care, care leavers, young people receiving income support and disabled young people receiving both Employment Support Allowance and Disability Living Allowance. Young people eligible for income support will include some teenage parents, young people estranged from their families, and those whose parents have died.

Other students facing financial difficulties may also be able to claim a bursary to help with costs of transport, food, equipment or other course-related costs.

