A LEVEL PHYSICS

WHAT IS PHYSICS?

Physics is the fundamental underpinning science. Its range extends from the ultimate building blocks of space and time to the smallest sub-atomic particles progressing up to the entire universe. In studying atoms, molecules, planets, stars, galaxies and the universe as a whole, Physics is the science of everything that can be measured.

We offer OCR syllabus A.

WHY SHOULD I STUDY PHYSICS?

You may choose to take Physics purely out of interest. Studying Physics encourages a peculiarly abstract and profound appreciation of the universe. One cannot have a deep understanding of the material world, and many topical areas such as climate change, power generation, electronics or medical imaging without an understanding of Physics. Whilst physicists themselves are highly employable, A Level Physics is also required for entry to most engineering courses, architecture and aeronautics.

USEFUL SKILLS & INTERESTS

You should enjoy problem solving and thinking, especially thinking about how things work at a fundamental level. Ideas and relationships in Physics are expressed mathematically so a facility with Mathematics is very desirable.

COURSE STRUCTURE & CONTENT

Like all A Levels, Physics aims to give a broad introduction to higher level concepts. We study:

- Experimental and Analytical Skills
- Electronic Circuits and Sensing
- Mechanical Properties of Materials
- Waves and Quantum Behaviour
- Space, Time and Motion
- Mathematical Modelling
- ‘Rocket Science’ and Relativity
- Cosmology and Astrophysics
- Thermodynamics
- Magnetism, Charge and Field
- Sub-Atomic Physics
- Ionising Radiation and Nuclear Physics

HOW WILL I BE ASSESSED?

For the A level you will sit three examinations as well as undertaking practical components which test a range of investigative skills. These skills include:

- The use of a range of analogue and digital equipment to take accurate measurements
- Design, construct and check circuits using DC power supplies, cells and a range of circuit components
- Using signal generators and oscilloscopes
- Using laser or light source to investigate characteristics of light
- Using data loggers with a variety of sensors to collect data
- The use of software to process data
- Safe handling of radioactive sources and radiation detectors

COURSE COMMITMENT

Students will be expected to work independently, outside the classroom, for at least 4 hours per week. This will allow time to complete assignments set in class as well as to review current work regularly and revise for the external examinations.

COURSE COSTS

None, though you will need a scientific calculator which can be purchased for less than £10 at college. We strongly recommend a course revision guide that we can provide at cost, this is approx. £10.

ENTRANCE REQUIREMENTS

For entrance on to this course you will need to meet the college standard entry requirements of 5 GCSE passes grades 4 - 9, including a GCSE grade 6 or above in English, Maths and Science (Combined) or Physics if studying Triple Science. Your G Score must be 5.5 or above. To work out your G Score please go to the college website and click on the 16 – 18 tab and then entry requirements. If you are not sure how to work this out please get in touch and we will be more than happy to help. It is also essential to take Maths alongside Physics as this helps a lot!

PROGRESSION ROUTES

A Level Physics is essential for degree level study in most Engineering disciplines as well as Physics & Astrophysics. However, Physics is widely regarded as opening possibilities in a wider range of career choices than almost any other subject.

Physicists are amongst the most employable of all science graduates, are in short supply and have access to an unusually wide range of career options. Physics develops highly transferable skills in numerical analysis, programming, logical thinking and system analysis. Physics graduates are extensively employed in such diverse fields as engineering, the defence industries, financial analysis, medical research and software development.

Some of the students who studied this course at Prior Pursglove College progressed on to:

- Aston University – **Chemical Engineering**
- Brunel University – **Aviation Engineering with Pilot Studies**
- Birmingham City University – **Mechanical Engineering**
- Cambridge University – **Natural Sciences**
- Edinburgh University – **Physics**
- G.C.H.Q.
- Hull University – **Architecture**
- Lancaster University – **Physics**
- Leeds University – **Mechanical Engineering / Aeronautical & Aerospace Engineering**
- Loughborough University – **Chemical Engineering**
- Manchester University – **Mechatronic Engineering**
- Northumbria University – **Product Design Engineering**
- Salford University – **Physics**
- Sheffield University – **Civil Engineering**
- Teesside University – **Chemical Engineering / Civil Engineering / Instrumentation & Control Engineering**
- University of Nottingham – **Physics**
- York University – **Physics with Astrophysics**

STUDENT COMMENTS

What our Physics students say:

“I have really enjoyed learning Physics at Prior. It is great fun and allows you to explain the reasons why many everyday objects work.”
“I have never regretted taking Physics – I look forward to it every day.”
“It’s great, it’s a lot better than school as you find out ‘why’.”
“Physics is a fun course that offers a multitude of interesting topics to cover. The work is challenging and fun and the teaching staff are really helpful.”
“Physics is a fun and enjoyable subject with plenty of opportunity to learn.”
“Definitely the most fun subject I’ve taken. The demonstrations are always very interesting.”
“I find Physics to be a great insight into the way the universe works.”
“Physics is an enjoyable and interesting subject while challenging at the same time. The staff are really helpful and help make the subject fun. It’s a course I highly recommend.”

FURTHER INFORMATION

More details on OCR A can be found at OCR.org.uk or if you have any further questions please contact Lucy Parker.