

QUALIFICATION:- A Level

You will study the following units:-

Year 12

Unit 1 - Measurements and their errors. Study of the fundamental physical quantities and their SI units. Knowledge and use of SI prefixes and conversion between different units of the same quantity.

Unit 2 - Particles and Radiation. Properties of the atom, nuclear radiation, particles and antiparticles, the nature of EM radiation and quantum phenomena.

Unit 3 - Waves. Characteristics, properties and types of wave. Wave reflection, refraction, diffraction and interference

Unit 4 - Mechanics and Materials. Scalar and vector quantities. Force, energy and momentum. Turning effects of forces. Linear motion and projectile motion. The study of material behaviour – bulk properties and tensile strength.

Unit 5 - Electricity. Fundamentals of electricity-current, potential difference and resistance. Resistances in series and parallel circuits. EMF and internal resistance.

Year 13

Unit 6 - Further Mechanics and Thermal Physics. Circular motion and SHM. Forced vibrations and resonance. Internal energy and changes of state. Behaviour of ideal gases and the molecular kinetic model of gases.

Unit 7 - Fields and their consequences. Field theory of Gravity, Electrostatics and Magnetism. Planetary orbits and satellites. Capacitor charge and discharge. EM induction and AC electricity.

Unit 8 - Nuclear Physics. Properties of the nucleus and production of nuclear power. Nuclear fission and impact on society.

Unit 10 - Medical Physics. Study the applications and physical techniques used in modern medicine. The eye, ear and medical imaging using ionising and non-ionising types of radiation.

New skills you will learn or develop further:-

You will develop core skills giving you the ability to communicate with both staff and your peers in written, numerical and verbal form at a high level.

A proportion of the course is in the form of practical work - in this type of assessment you will be involved with planning, organisation, implementation and analysis based skills all of which will be tested allowing you to improve, augment and showcase your abilities.

Possible careers paths you could follow include:-

Aeronautical engineer; conservation officer; civil engineer; pilot; nuclear scientist; systems analyst; recording engineer; astronomer; doctor; dentist; automotive engineer; geologist; surveyor; marine scientist; space scientist and veterinary surgeon.

SUBJECT:- Physics

Entry Profile for your course:-

You would generally have an idea of a possible career in a science and engineering related industry although many students go on to other disciplines which require a higher level of numeracy and literacy such as accountancy and law.

Most students are aware of the academic rigor attributed to the subject, as are universities and employers, this is why a large proportion of them regard a student with this qualification as very desirable. Physics students see themselves as bright, determined individuals who thrive on challenge and wish to do well.

Entry Requirements:-

To be eligible, you will need to have at least 5 GCSEs grade A*-C which should include a grade B in Maths.

A grade B in either GCSE Physics, Additional Science or Further Additional Science is essential.

How will my course be assessed:-

Paper 1 - 2 hours . Questions from Units 1-5 (and 6 on circular motion and SHM)

Paper 2 - 2 hours. Questions from Units 6-8 (with knowledge from 1-5)

Paper 3 - 2 hours. Practical skills and data analysis. Questions from Unit 10

When will my course be assessed:-

Assessment comes from the three exams to be sat at the end of Year 13. No exams in Year 12.

Practical work is assessed throughout the course by way of 12 essential practicals which provide a practical endorsement on the final certificate. Knowledge of these practicals is expected for the three exams.