

National 4 Physics

Course Rationale

Physics is the most basic and fundamental science. It is the study of energy, motion and matter. Physics explains 'how things work' and its understanding and application leads to the development of new technologies. You will learn how physics is applied in society and the environment. Physicists are problem solvers. The ability to think 'outside the box' makes people who have studied physics desirable in many career areas including all branches of engineering, telecommunications, clinical science, medicine, computer science, astronomy and renewable energy.

Course Content

From the sources of the energy we use to the exploration of space, advances in physics mean that our view of what is possible is continually progressing. You will have the opportunity to design and carry out experiments and investigations to help you understand the role of physics in scientific issues and in our lives.

The course has **three** compulsory units, plus an added value unit.

Physics: Electricity and Energy

In this unit you will learn about the key areas of the generation of electricity, electrical power, electromagnetism, practical electrical and electronic circuits, gas laws and the kinetic model.

Physics: Waves and Radiation

In this unit you will investigate the key areas of wave characteristics, sound, the electromagnetic spectrum and nuclear radiation.

Physics: Dynamics and Space

In this unit you will investigate speed and acceleration, the relationships between forces, motion and energy, and study satellites and cosmology.

Added Value Unit: Physics Assignment

This unit includes carrying out an investigation using the skills and knowledge you have developed in the other three units.

Skills

Studying Physics will help you to develop your logical and critical thinking, solve problems and make decisions. You will continue to further your numeracy and scientific literacy skills, as well as your practical skills

Course Assessment

Your work will be assessed by your teacher on an on-going basis throughout the course. Assessed items include practical experiments, research assignments and class-based exams. You must pass all of the units including the added value unit to gain the course qualification.

Progression

If you complete the course successfully, it may lead to National 5 physics National 4 courses in Biology or Chemistry, National Progression awards (SCQF level 4 or 5) or further study, training or employment in engineering, science, mathematics or health and medicine.

Career Pathways

3D printing specialist	AR/VR programmer	CAD technician	Electrician
Mechanic	Radiographer	Physiotherapist	Scene of Crime Officer
Laboratory Technician	Offshore service technician	Textile Technologist	

Engineer or Engineering technician: Aerospace, Automotive, Agricultural, Aircraft Maintenance, Gas service, Civil, Clinical, Electrical, Electronics, Manufacturing, Nuclear, Marine, Sound, Structural, Robotics, Telecoms etc .