**PHYSICS ADVANCED HIGHER**

The main aims of this Course are:

* Extending and applying knowledge of physics to new situations, interpreting and analysing information to solve more complex problems
* Planning and designing physics experiments/investigations, using reference material and including risk assessments, to test a hypothesis or to illustrate particular effects
* Carrying out complex experiments in physics, safely, recording systematic detailed observations and collecting data
* Selecting and presenting detailed information appropriately, in a variety of forms
* Processing and analysing physics information (using calculations, significant figures and units, where appropriate)
* Making reasoned predictions and generalisations from a range of evidence/information
* Drawing valid conclusions and giving explanations supported by evidence/justification
* Critically evaluating experimental procedures by identifying sources of uncertainty, suggesting and implementing improvements
* Drawing on knowledge and understanding of physics to make accurate statements, describe complex information, provide detailed explanations and integrate knowledge
* Communicating physics findings/information fully and effectively
* Analysing and evaluating scientific publications and media reports

**CONTENT**

**Rotational Motion and Astrophysics**

This Unit develops knowledge and understanding and skills in physics related to rotational motion and astrophysics. It provides opportunities to develop and apply concepts and principles in a wide variety of situations involving angular motion. An astronomical perspective is developed through a study of gravitation, leading to work on general relativity and stellar physics.

**Quanta and Waves**

This Unit develops knowledge and understanding and skills in physics related to quanta and waves. It provides opportunities to develop and apply concepts and principles in a wide variety of situations involving quantum theory and waves. The Unit introduces non-classical physics and considers the origin and composition of cosmic radiation. Simple harmonic motion is introduced and work on wave theory is developed.

**Electromagnetism**

This Unit develops knowledge and understanding and skills in physics related to electromagnetism. It provides opportunities to develop and apply concepts and principles in a wide variety of situations involving electromagnetism. The Unit develops knowledge and understanding of electric and magnetic fields and capacitors and inductors use in dc and ac circuits.

**Investigating Physics**

In this Unit, learners will develop key investigative skills. The Unit offers opportunities for independent learning set within the context of experimental physics. Learners will identify, research, plan and carry out a physics investigation of their choice.

**INTERNAL ASSESSMENT**

To pass the physics course, learners must pass all of the required Units. This includes a Unit Assessment, and a practical write up.

**EXTERNAL ASSESSMENT**

Learners must sit an external exam and complete a practical investigation. Both of these elements are externally marked.

**HOMEWORK**

About 2 hours per week to go over notes, answer questions and prepare for tests.

**ENTRY REQUIREMENTS**

Pupils should have a grade A-C pass at National 5 level Physics, however, pupils with a C level pass may struggle with this course.