



## A Level - Physics

### Overview:

Physics has long been thought of as the most fundamental of all sciences and at Cardinal Newman, students study a wide variety of topics in Physics ranging from the macro to micro scale such as galaxies to sub-atomic particles. We are proud to say that Physics is one of the most successful A-Level subjects in the Sixth Form and is rated outstanding compared with other schools nationally in terms of our results. Students learn to question why things happens and how these events are governed by the fundamental laws of nature. Many students might consider physics to be a difficult subject- while it is challenging, it is equally exciting due to its practical nature. Students need to be fully committed to working hard consistently all through the course.

**Assessment Overview** - This is a 2 year course with all assessments at the end of the second year. Learners must complete all components (01, 02, 03 and 04). Content is split into 6 teaching modules.

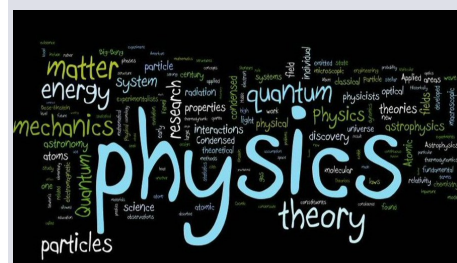
**Module 1 - Development of practical skills in physics - 37%**  
Modelling physics (01) 100 marks 2 hours 15 minutes (written paper)

**Module 2 - Foundations of physics - 37%**  
Exploring physics (02) 100 marks 2 hours 15 minutes (written paper)

**Module 3 - Forces and motion - 26%**  
Unified physics (03) 70 marks 1 hour 30 minutes (written paper)

**Module 4 - Electrons, waves and photons, Module 5 - Newtonian world and astrophysics, Module 6 - Particles and medical physics - Reported separately**

Practical endorsement in physics (04)\* (not an examined assessment)  
\*The Practical Endorsement requires a minimum of 12 practical



### Head of Department

**Mrs Raza**

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### ENTRY REQUIREMENTS

You need to have achieved at least a 6-6 in GCSE Science or a 6 in GCSE Physics. You also require a 6 in GCSE Mathematics and at least a 4 in GCSE English. Overall, you must 5 GCSEs at grade 5 or above.

When considering A-level Physics, it is important to realize that 40% of the final exam mark is based on mathematical skills so a sound knowledge of GCSE Mathematics is essential. It is advisable to study Mathematics as one of your A-level subjects. You will develop your practical ability as well as the ability to recognise, recall and show understanding of specific physics facts, terminology, principles & concepts.





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### What will I study?

#### Module 1 - Development of practical skills in physics

- Practical skills assessed in a written examination
- Practical skills assessed in the practical endorsement

#### Module 2 - Foundations of physics

- Physical quantities and units
- Making measurements and analysing data
- Nature of quantities

#### Module 3 - Forces and motion

- Motion
- Forces in action
- Work
- Energy and power
- Materials
- Momentum

#### Module 4 - Electrons, waves and photons

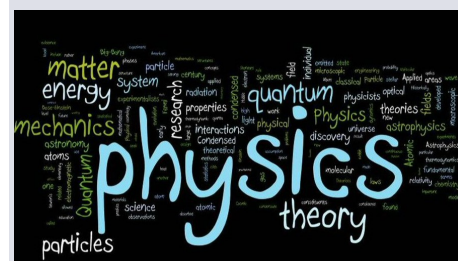
- Charge and current
- Energy, power and resistance
- Electrical circuits
- Waves
- Quantum physics

#### Module 5 - Newtonian world and astrophysics

- Thermal physics
- Circular motion
- Oscillations
- Gravitational fields
- Astrophysics and cosmology

#### Module 6 - Particles and medical physics

- Capacitors
- Electric fields



### POSSIBLE CAREER OPTIONS

A level physics is a very desirable qualification when applying for university courses, especially if combined with complimentary subjects such as the other Sciences and Maths.

Having A-level physics is very impressive in a variety of ways, offering you access to a huge range of options for both further education and careers, including:

- Forensic scientist
- Technical support specialist
- Sound engineer
- Academic researcher
- Geophysicist
- Research analyst
- Aerospace engineer
- Nanotechnologist
- Engineering
- Meteorologist
- Climatologist

