Gordon's
Sixth Form

Physics

A Level and AS Level

Year 12 (AS Level)

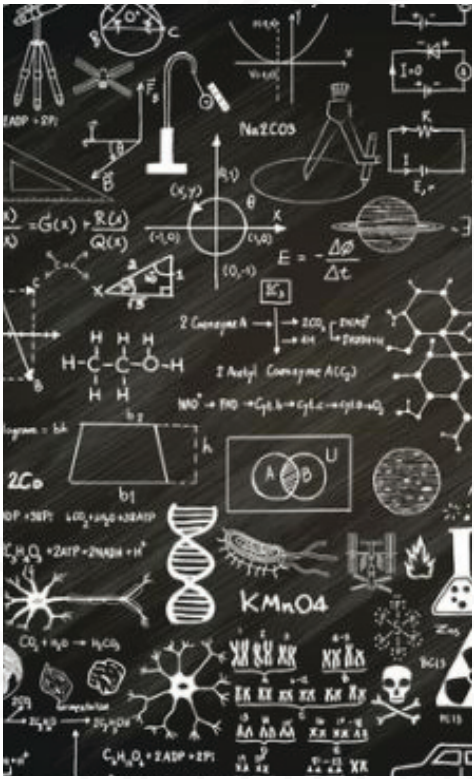
During the AS course, students will study:

Particles and radiation: This section introduces students both to the fundamental properties of matter, and to electromagnetic radiation and quantum phenomena.

Waves: GCSE studies of wave phenomena are extended through a development of knowledge of the characteristics, properties, and applications of travelling waves and stationary waves. Topics treated include refraction, diffraction, superposition and interference.

Mechanics and materials: Vectors and their treatment are introduced followed by development of the student's knowledge and understanding of forces, energy and momentum. The section continues with a study of materials considered in terms of their bulk properties and tensile strength.

Electricity: This section builds on and develops earlier study of these phenomena from GCSE. It provides opportunities for the development of practical skills at an early stage in the course and lays the groundwork for later study of the many electrical applications that are important to society.



Year 13 (A Level)

To complete the A-Level, students will study the following topics in addition:

Further mechanics and thermal physics: The earlier study of mechanics is further advanced through a consideration of circular motion and simple harmonic motion (the harmonic oscillator). A further section allows the thermal properties of materials, the properties and nature of ideal gases, and the molecular kinetic theory to be studied in depth.

Fields and their consequences: Practical applications considered include: planetary and satellite orbits, capacitance and capacitors, their charge and discharge through resistors, and electromagnetic induction.

Nuclear physics: This section builds on the work of particles and radiation to link the properties of the nucleus to the production of nuclear power through the characteristics of the nucleus, the properties of unstable nuclei, and the link between energy and mass.

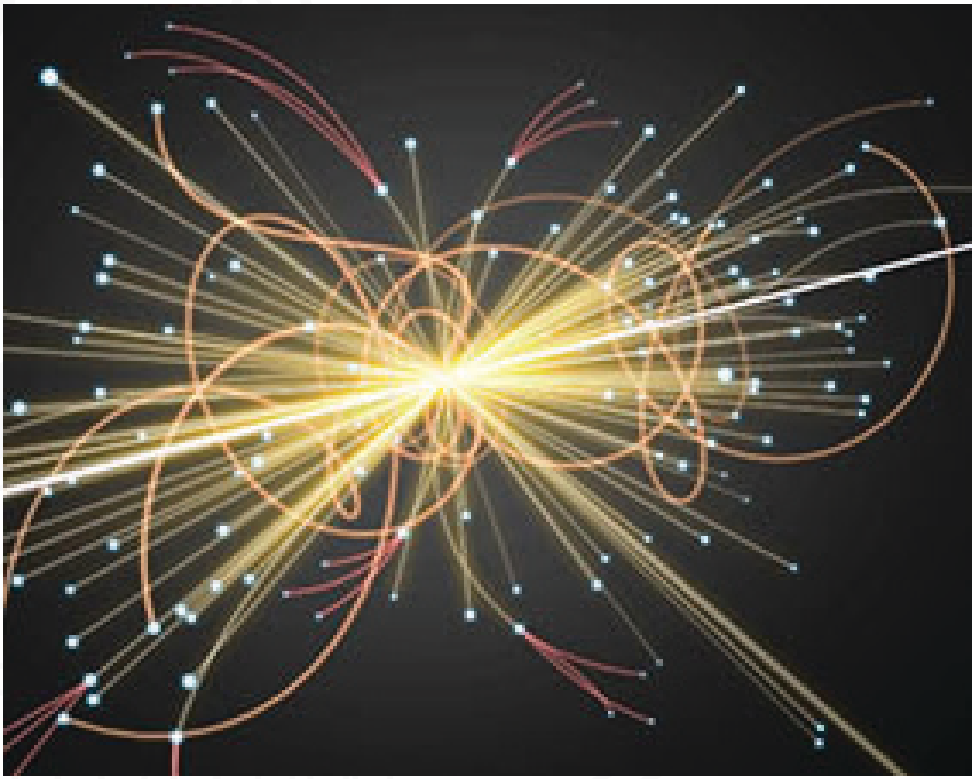
An optional topic which could be:

Turning points in physics; this topic looks at the important areas of the history of physics and the development of modern theories.

Engineering physics which takes mechanics further, learning how the combustion engine works as well as refrigerators and heat pumps.

Medical physics which allows students to study the eyes, ears as well as different forms of medical imaging.

Astronomy which allows students to explore the solar system and universe.



Overview of results:

A*-A	37%
A*-B	63%
Pass	100%

Transferable skills

- Problem solving
- Communication
- Research skills
- Numeracy
- Analytical skills

What can I study at university?

- Physics
- Astrophysics
- Mechanical Engineering
- Aeronautical Engineering
- Medicine
- Materials Science
- Dentistry
- Computer Science
- Architecture
- Sports Science

Careers

Physics is a good foundation for:

- Theoretical Physicist
- Financial Services
- Armed Forces
- Games Developers
- Engineering
- Architecture

Famous people who studied physics

- Dara O Briain
- Brian May
- Brian Cox

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