Physics

The A Level OCR physics `A` specification courses offered provide a very good basis for students to progress into further education to study physics or engineering, or to enter employment where a knowledge of physics would be useful. The course includes the study of electricity, magnetism, forces, fields, motion and the frontiers of physics and other topics. Students are given the opportunity to develop their interest and enthusiasm as they progress through the course, where the emphasis is on understanding the concepts taught. Lesson time is divided between practical and theory work. To reinforce what is learnt in class it is expected that students will spend a considerable amount of time in independent study and regular assignments will be set.

Course Structure & Content

Year 12

Module 1: Development of Practical Skills (this module bridges both years of the course).
• Planning, implementing, analysis and evaluation of practical work
Module 2: Foundations of Physics
• Physical quantities and units; scalars and vectors; and measurements and uncertainty
Module 3: Forces and Motion
• Forces in action; work energy and power; materials and Newton's laws of motion and momentum
Module 4: Electrons, Waves and Photons
• Charge and current; energy, power and resistance; electrical circuits; waves and quantum physics.

Year 13

Module 5: Forces and Motion
• Thermal physics; circular motion; oscillations; gravitational fields and astrophysics.
Module 6: Electrons, Waves and Photons
• Electric fields; electromagnetism; nuclear and particle physics and medical imaging.

Assessment

Paper 1 (2 hours 15 minutes): Modelling physics is a combination of multiple choice and structured questions examining theory and practical skills based on modules 1, 2, 3, and 5. (37%)
Paper 2 (2 hours 15 minutes): Exploring physics is a combination of multiple choice and structured questions examining theory and practical skills based on modules 1, 2, 4, and 6. (37%)
Paper 3 (1 hour 30 minutes): Unified physics is a combination of multiple choice and structured questions examining theory and practical skills based on all modules (26%)
Practical Endorsement for Physics – Candidates complete a minimum of 12 practical activities and investigations covering key skills and topic areas over the two year course. Evidence of candidates meeting a series of competencies in practical skills is assessed by class teachers and moderated externally. Performance in this assessment is reported separately to the A Level grade as a pass/fail certificated endorsement. It does not count towards the final A Level grade.

Entry Requirements

Students need grade 6/6 in Combined Science or grade 6 in Physics and a grade 6 in Maths

Progression

Progression is generally to higher education and A Level physics is often a requirement to study a range of engineering degrees, forensic science and traditional physical sciences degree courses. Some universities also require it to be studied for medicine/veterinary degrees. Employers also value A Level physics as they demonstrate the ability to organise information and to think logically