Physics A Level

Course Description:

Are you the kind of person who wants to know how the world works? Do you have an enquiring mind? If you have enjoyed the Physics topics in your GCSE Science course and have logical and mathematical ability then this course will suit you. The physics is approached through various real-life contexts and you will find that there are many practical experiments and demonstrations to help you to understand the key concepts. Physics is a challenging subject; you will have to work hard but it opens up many good opportunities beyond the Sixth Form.

Qualifications Required:

Minimum entry requirements apply. Grade 6 in Physics and at least a Grade 6 in Biology or Chemistry, **or,** two Grade 6s in Combined Science. A Grade 5 or above in English and a Grade 6 or above in Maths is also required.
Study of Maths at Sixth Form level would also be very useful, and essential if you wish to go on to study Physics or Engineering at University.

Aims of the Course:

- Sustain and develop an enjoyment of, and interest in, physics and its applications
- Develop an understanding of the link between theory and experiment and foster the development of skills in the design and execution of experiments
- Develop essential knowledge and understanding in physics and, where appropriate, the applications of physics with an appreciation of their significance
- Demonstrate the importance of physics as a human endeavour that interacts with social, philosophical, economic and industrial matters
- Build competence and confidence in a variety of practical, mathematical and problem solving skills
- Be a suitable preparation for higher educational courses in physics and related subjects

Future Prospects:

Physics combined with Mathematics at A level offers a wide range of opportunities including Physics or Engineering at University. Be successful in your physics studies and any potential employer will be in no doubt that you have the ability, both in intellect and hard work, to make a real contribution to their organisation.

Student Feedback:

'This course is interesting and will be a good qualification for a wide range of future careers.'
'There's a lot of practical work and it's challenging, but fun too.'
'The Physics teachers were very encouraging and were always available for extra support outside of lesson time'
'Physics was taught in an enjoyable and engaging way. Teaching reflects their passion for the subject.'
'I loved learning about new Physics, especially on the trip to CERN.'

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Features of the Course:

- Motivating, up-to-date, contemporary contexts where physics has helped to improve lives
- Many opportunities for practical and investigative work
- Opportunities to apply physics principles and concepts in familiar and new contexts
- Chance to find out how physics is used in engineering and technology and how physics research has extended our understanding of the physical world at a fundamental level

Units

Paper 1, Advanced Physics 1

This unit involves the study of mechanics, electricity, electric and magnetic fields, and particle physics. Contexts include modern rail transport system, communications and display techniques. Particle physics is the subject of current research, involving the acceleration and detection of high-energy particles, the quark-lepton model, how particle accelerators work and how the Higgs boson was finally found.

Paper 2, Advanced Physics 2

This unit involves the study of materials, waves and the wave/particle nature of light, thermal energy, nuclear decay, oscillations, astrophysics and cosmology including the formation and evolution of stars, the big bang, the history and future of the universe.

Paper 3, General and Practical Principles in Physics

Questions in this paper may draw on any of the topics in this specification; questions will assess students' understanding of experimental methods and will draw on their experiences of the core practicals.

Methods of Assessment:

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Paper 1: One hour 45 minutes written paper, 30% of total A level marks
Paper 2: One hour 45 minutes written paper, 30% of total A level marks
Paper 3: Two hours 30 minutes written paper, 40% of total A level marks