

Our Physics A Level course aims to develop students' knowledge and understanding of a wide range of Physics topics whilst developing their practical and ICT skills. We also aim to instil in students a lifelong interest in following the constant developments in Physics theory worldwide.

Through the Physics A Level course candidates develop their ability to learn independently, in addition to enhancing their analytical, research and communication skills.

The content is motivating and the student text books are full colour, clear and inspiring. The resources within the department are extensive and all Sixth Form laboratories are fully equipped with computing facilities.

The material covered includes the traditional favourites in Physics as well as additional areas of Physics that will be new and exciting for our A Level students. The topics include:

- Quantum Physics: students will explore evidence of light behaving as a particle and will be introduced to the photon model to explain observable phenomena
- Nuclear Physics: this includes evidence for the existence of the nucleus and smaller subatomic particles, radioactive decay, nuclear energy, fission and fusion processes and the use of $E = mc^2$
- Particle Physics including antimatter
- Magnetic, electric and gravitational fields
- Forces and motion including Newton's laws, the use of vectors, kinematic equations, parabolic motion, circular motion and momentum
- Mechanics and Materials
- Waves and optics
- States of matter including the gas laws, kinetic theory and specific heat capacity

The Sixth Form experience also includes an annual trip to CERN in Geneva for those who would like to visit the world's biggest Physics experiment. In preparation for this, students learn about the use of electric and magnetic fields in particle accelerators and about the most up to date results from current research in particle physics.

We also offer a trip to visit the Kennedy Space Centre in Florida once every three years. This is an exciting opportunity to see how Physics is used in the fascinating context of the NASA Space Programme.

The department runs extension lessons for Lower Sixth students from January to May and for the Upper Sixth during Autumn Term. These are for students wanting to delve deeper into the subject. Extension classes are also offered to Engineers looking at topics related to Mechanical, Electrical and Civil Engineering.

Revision classes run for both year groups from February until May to help students to prepare for their exams.

