Physics A Level

Subject Leader: Mr James

Syllabus: OCR Physics A

Course Specification: H556

Course Requirements
5 GCSEs graded 9 – 5 including English at grade 6 and Maths at grade 6. Recommend a 7 in Maths.
Grade 7-6 in Combined Science or Grade 6 in Physics required.

Year 1
Students will cover 4 modules of work during the course of the year, split between 2 teachers. Module 1 is the development of practical skills in Physics. This will cover planning, implementing, analysing and evaluation of practical procedures from throughout the Physics course. Module 2 covers the foundations of Physics: the nature of quantities, how we make measurements and analyse data. Module 3 looks at forces and motion, including looking at Newton's laws of motion and momentum. Module 4 covers electrons, waves, and photons. In this final module, we examine charge and current, energy, power and resistance, electrical circuits, waves, and quantum physics.

Year 2
Students who continue to the second year of study build on their knowledge of Physics by completing 2 further modules of work. Module 5 looks at the Newtonian world and astrophysics, looking at thermal physics, circular motion, gravitational fields, and the cosmology. Module 6 covers particles and medical physics: medical imaging, capacitors, electric fields, and electromagnetism before looking at nuclear and particle physics.

Assessment
Throughout the course, students will take assessments at the end of each topic to monitor progress, as well as through assessment of significant pieces of work. These assessments do not count towards the final grade. There will also be internal assessments at the start of the course and at the end of year 12. At the end of year 13, students sit 3 papers.

Paper 1: Modelling Physics, content from modules 1, 2, 3 and 5. 37% of grade.

Paper 2: Exploring Physics content from modules 1, 2, 4 and 6. 37% of grade.

Paper 3: Unified Physics. This will examine content from the whole specification. 26% of grade.

There is also a Practical Endorsement in Physics which will be reported separately to the A level grade, where students keep a lab book of practical experiences over the 2 years of the course. In total, there are 12 practical areas that students need to have covered.

Teaching and Learning Styles
Physics, like all sciences, is investigative by its nature. It is also the most mathematical of the sciences, with 40% of the final grade being assessment of mathematics. There will be opportunities for students to develop their practical skills as well as developing their analytical and thinking skills. Students will be expected to communicate well both orally and in their written work, producing creative presentations of their understanding of the biology involved.

Independent Study
Independent work is encouraged and promoted. Students must read up on content before the lesson and then use time after the lesson to complete work, for example, revision materials to further their understanding of the topic. Students would be expected to spend an average of 6 hours per week on independent study. Students will have access to an online textbook and resources through our Sixth Form learning resource, Kerboodle.

Future Pathways
Physics, like all the sciences, is a facilitating subject, one that many universities require students to have to get onto many degree courses. The A Level Physics course will prepare learners for progression to undergraduate study, enabling them to enter a range of academic and vocational careers in mathematics-related courses, physical sciences, engineering, medicine, computing, and related sectors. For learners wishing to follow an apprenticeship route or those seeking direct entry into physical science careers, this A level provides a strong background and progression pathway.

