

Physics

OCR A Specification



General information:

The Physics course aims to provide students an ability to understand the physical world around them, from the minute kingdom of sub-atomic particles to the colossal scales of the solar system and universe. We seek to create informed and considered decision makers who can weigh-in on scientific topics and feel confident experimenting and testing hypothesis. Physics at BWS offers a knowledge-rich curriculum which provides everyone the chance to develop their understanding of scientific processes and skills through lots of hands-on experimentation. At BWS problem solving, both theory and mathematical, is at the heart of study and we strive to create enthusiastic and passionate physicists.

Course content:

In Year 12, the course is divided into two main modules *forces and motion* (covering vectors, mechanics, kinematics, momentum and material science) and *electrons, waves and photons* (covering DC electrical circuits, complex and sensing circuits, wave behaviour, properties of light, quantum and wave-particle duality).

In Year 13, the course becomes more diverse with content divided within two central modules; *Newtonian World* (covering oscillations, harmonics, astrophysics and gravitation) and *Fields, Particles and Medical Physics* (covering electric & magnetic fields, sub-atomic particles, radioactivity, fundamental forces and medical applications).

How is the course taught and assessed?

Physics is taught in specially designed labs and classrooms by specialist staff. Students will have two teachers for the subject, and will be expected to undertake homework and independent study outside of the classroom. Assessment is by three exam papers and practical endorsement. The first two exam papers contribute 37% of the grade and the final exam is synoptic and makes up 26% of the final grade. Mathematical skills will make up a minimum of 40% of the questions through the three papers. To pass the practical endorsement element, students are required to carry out practical activities, recorded in lab books.

Entry requirements:	Results information:	Top destinations for students:
As well as the general entry requirements for BWS, Grade 7 in GCSE Physics or Grade 7,7 in Combined Science and Grade 7 in GCSE Mathematics	Physics is a very successful subject at Bishop's. In 2019, out of 45 students entered, 15 students got A* and 13 got A's. 85% A*-B.	Oxford / Cambridge/ Imperial College Physics (pure, applied and astro) Engineering (aerospace, electrical, civil, and many more disciplines) Computing and Mathematics

Beyond the curriculum:

Students are encouraged to sit the Physics Challenges and Olympiads which provide the option to extend knowledge beyond the specification and we have had considerable past success in achieving awards including 6 Gold awards in 2020. The Physics department also offers extensive extracurricular opportunities through guest speakers, BAYS (British Association of Young Scientists), trips to local universities, and visiting workshops from engineers and computer scientists. Physicists in 2017 and 2019 have also had the chance for a once in a lifetime visit NASA, Kennedy Space Centre, in Florida to experience first-hand the thrill of applied physics.

