PHYSICS

Exam Board: Welsh Joint Education Committee (WJEC)

Summary: A two year A Level course, examined at the end of Year 12 and Year 13

What do I need to know or be able to do before taking Physics?

You will need to get at least an A in Physics GCSE and at least an A in Mathematics GCSE. During the course students will need to have the ability to communicate effectively and a grade B or above is needed in English Language.

What will I learn?

Students will be able to:

• Acquire a body of physical knowledge and an appreciation of its significance

• Develop experimental skills including electrical meters, Geiger counters and oscilloscopes

• Develop an understanding of scientific method including controlling variables, statistical analysis and evaluation of results

• Gain an appreciation of the role of physics in a modern technological society and follow the latest developments in physical science

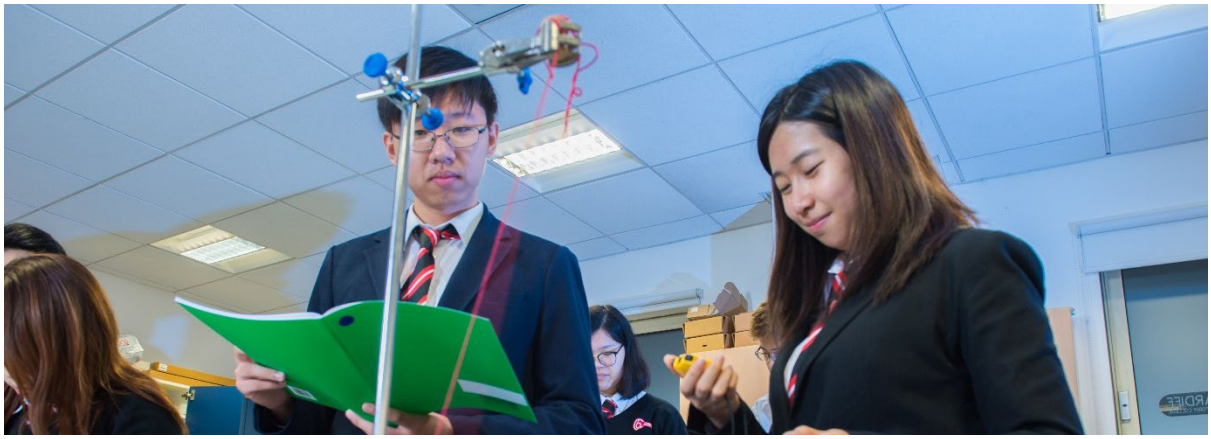
What kind of student is the course suitable for?

• Students who have an interest in the physical universe and mathematics

• Students who have an enquiring and critical nature

• Students who enjoy problem solving

• Students who are planning careers as engineers, pure scientists, pilots, financial analysts



PHYSICS

CARDIFF SIXTH FORM COLLEGE

Specification content:

• Unit 1 - Motion energy and matter (Kinematics, energy concepts, radiation and stars, particle physics)

• Unit 2 -Electricity and light (DC circuits, waves and light, refraction, laser physics)

• Unit 3 -Oscillations and nuclei (circular motion, simple harmonic motion, thermal physics and kinetic theory, nuclear decay and energy)

• Unit 4- Fields and options (capacitance, electric, gravitational and magnetic fields, orbits, electromagnetic induction. Plus ONE from: AC theory, Medical physics, Sports physics, energy and the environment)

• Unit 5 -Development of Practical Skills in Physics

What examinations will I have to take to get my qualification?

• Unit 1 Motion, energy and matter. 80 marks -1 hours 30 minutes 20% of full A Level

• Unit 2 Electricity and Light. 80 marks -1 hours 30 minutes 20% of full A Level

The full A Level qualification requires the above plus 3 further units which include extended answers and a comprehension.

• Unit 3 Oscillations and nuclei. 100 marks -2 hours 15 minutes 25% of full A Level

• Unit 4 Fields and options. 100 marks -2 hours 25% of full A Level

• Unit 5 Practical examination, which comprises an experimental task and a practical analysis 50 marks in total -10% of full A Level

What could I go on to do at the end of my course?

• Civil, mechanical, electrical, mining, chemical, biomedical, and many other Engineering degree courses. Also robotics, cybernetics, finance, computing and medical courses. Plus many others

• Physics is highly regarded by all the top universities and is a desirable subject to have studied in any numerate career

Departmental Trip

An optional annual trip is taken to the Large Hadron Collider at the CERN facility in Geneva Switzerland. An additional charge will be incurred for students wishing to participate.