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A Level in Physics

Location	Altrincham Campus
Course Type	College 16-18
Department	A Levels
Start Date	Monday 2nd September 2024
Course Code	AFQ-AL3L-1111

Course Overview

In A Level Physics, students will learn about the universe across a wide range of scales, from the sub-atomic (in particle and nuclear physics) to the astronomic (in stellar astrophysics and cosmology), as well as all manner of things in between. Some of the territory, such as forces, motion, waves, and electromagnetism, may be familiar from GCSE, but will be explored in much more depth, and we'll see whole new phenomena and areas of application in these topics. Other areas will be new. We'll learn how objects interact gravitationally and electromagnetically, investigate the very nature of matter itself in quantum physics, and see how oscillatory motion can be used to understand a wide range of phenomena. Along the way, we will apply what we've learned to understand the universe on the largest of scales in cosmology, and how to effectively image the human body in medical contexts.

Throughout the course, there will be frequent use of mathematical thinking and problem-solving skills. Students will develop an understanding of use of maths as the language of physics and learn a variety of tools to tackle and simplify complex problems. The mathematical and problem-solving skills learned in this course are highly transferable to a lot of fields outside of physics, from computing to business to medicine.

Students who wish to do Physics at university, or a related subject such as Engineering, are advised that such courses will have A Level Mathematics as an entry requirement. For these reasons, students are strongly recommended to take A Level Mathematics alongside A Level Physics.
If you enjoy solving challenging problems, are hungry to understand how the universe works, and want to use your mathematical skills to reach those goals, then A Level Physics may be the course for you.
All students follow the A Level Physics OCR A specification.

Course Requirements

PLEASE NOTE - YOU MUST APPLY FOR 3 A LEVELS

Standard A Level entry requirements: 5 x GCSE grade 5's or above (must include Maths and English Language). However, certain subjects may have additional entry criteria, which can be found below:

Additional Entry Requirements:
A Level Physics will require grade 6 in GCSE Maths
A Level Physics will require grade 6 in GCSE Physics or 66 in Combined Science.

This subject must also be studied alongside at least one other science-based (Maths, Biology, Chemistry, Physics) course.

What You Will Learn

A-Level Physics builds upon the content covered and the skills developed at GCSE and focuses a range of topics, giving students a better insight into the concepts and principles which underly the physical world.

Specifically, we will look within the atom at the smallest constituents of matter.Then, in Year 2, we will look at the biggest ideas of all; the exploration of the universe.

Assessment

At the end of the second year, students would complete three exams:

Paper 1: Modelling Physics - module 1, 2, 3, and 5 (37% of final grade)
Paper 2: Exploring Physics - module 1, 2, 4, and 6 (37% of final grade)
Paper 3: Unified Physics - all modules (26% of final grade)

Practical skills are assessed continuously throughout the course. Students will complete 12 practical activities, which will be assessed separately as part of the Practical Endorsement.

Progression

A Level Physics supports progression to a wide range of scientific and mathematical university courses. Our students have gone on to do such diverse university courses as Accounting, Astrophysics, Biochemistry, Civil Engineering, Computer Science, Mathematics, Medicine, and, of course, Physics, among many others.

Career Options

Physics is an essential subject for engineering and will be very useful in a range of careers from architecture to Zoology.
Employers value the logic and problem solving skills it develops

Mandatory Units

Module 1: Development of practical skills in physics
Module 2: Foundations of physics - units and vectors
Module 3: Forces and motion - motion, forces, energy, momentum, materials
Module 4: Electrons, waves and photons - electricity, waves, quantum physics
Module 5: Newtonian world and astrophysics - thermal physics, ideal gases, oscillations, gravitational fields and orbits, astrophysics
Module 6: Particles and medical physics - electromagnetism, particle physics, nuclear physics, medical physics

Contact Details

For further information please contact T: 0161 886 7070 or E: info@trafford.ac.uk

Disclaimer

Although every care has been taken to ensure that the information contained within this document is accurate, there may be changes to this programme and provision. We will endeavour to keep prospective and current students updated where appropriate and when the information becomes available.