

Physics

A Level

What is the subject about?

Physics is the study of nature; it aims to understand particles, energy, forces and fields on both the smallest and largest scales, from the interaction of the smallest particles yet discovered to the way the Universe has evolved since the beginning of time. In the final topic of the 2nd year, you will choose an optional module linked to your own personal interest.

For A level Year 1 you will study:

In the first year we begin by studying how Physicists make measurements of the natural world, and consider the uncertainties and errors associated with these measurements. We will look at the fundamental particles and forces that our Universe is made up from, and how those particles interact. We will go on to look at wave behaviour, materials and how objects move, as well as increasing our understanding of electricity from GCSE level.

For A level Year 2 you will study:

A level Year 2 we will continue to look at motion in more detail. We will study thermodynamics and gas laws, as well as the molecular kinetic theory model. We will also cover uniform and non-uniform fields, both electric and gravitational and see how these fields dominate the landscape of the Universe on both the small and large scale. We will then consider electromagnetic machines and electrical components in order to begin to understand the technologies that are ubiquitous in the modern world.

How is the course assessed?

Year 1 – internal examination at the end of Year 1

A level – 100% examination at the end of Year 2 plus a Practical Endorsement assessed over the 2 years.

What skills will I need and develop in this course?

The most important skill for a Physicist is to be able to think logically and solve problems that are posed in new and unfamiliar circumstances, and the A level Physics course will develop your ability to do this. You will need to have a reasonable degree of mathematical skill, and practical investigation skills are very important.

Subject combination advice:

We strongly advise you to take maths and another science subject (especially if you are considering medicine) as many science degree courses related to Physics require maths and two sciences at the top universities.

What can the course lead to in terms of higher education and future careers?

This course is an excellent foundation (and indeed essential) for further study of Physics, astrophysics, a whole range of engineering degrees, medical physics and medicine. The problem solving skills you will develop in Physics could lead to careers in all sorts of areas such as research and development, design, sustainable energy, telecommunications, meteorology, law, finance, media technology, computer gaming design, transport and education. It is also highly recommended for other science degrees and maths.

What are the formal entry requirements for this course?

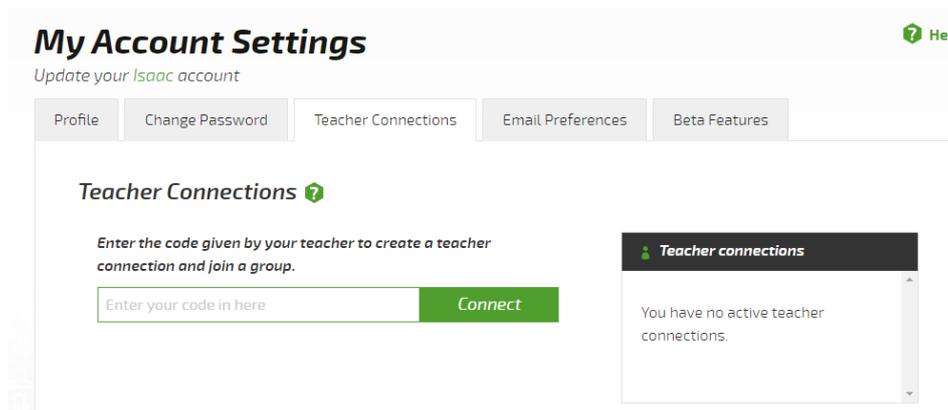
A level Physics is both a theory and practical based course that is assessed by exams and internal controlled practicals and builds directly on GCSE work in Physics and Maths. National evidence suggests it is difficult to succeed unless you have an appropriate base of knowledge and a good track-record of success in exam based courses at GCSE. To ensure you have a reasonable chance of success our recommendation is at least **66 in GCSE Science Trilogy or 6 in GCSE Physics together with 6 in GCSE Maths (Higher Level)**.

Why should I consider taking an A level in Physics?

For many Physicists their major motivation is the pursuit of the knowledge and understanding of the laws that govern our Universe. However beyond this, Physics teaches you transferable skills and allows you to approach new problems from a point of logic, which is why it can lead to such a huge range of careers. Many of the challenges facing society today will be solved by people who have Physics training, whether it is in solving the energy crisis, climate change or developing new treatments for disease, Physics can equip you to take on these enormous tasks. Much of the technology we rely upon today evolved directly from discoveries made by Physicists, and so the study of more fundamental Physics such as the particle model or astrophysics could yet lead to unimagined solutions to some of today's problems. If you would like to know more about the nature of the Universe and develop skills that will help you to forge a career that can make a difference to others then Physics is a fantastic choice.

Course prerequisite:

In order to ensure you have the required academic ability and work ethos required to succeed on the A-level Physics course you must complete some online tasks using *Isaac Physics*. Go to <https://isaacphysics.org/> and register with the site. Once you have registered, on your account settings page select "Teacher Connections" and enter this code: **WWZ4NB**



Next, go to the menu and select “My Assignments”. You have one assignment to complete for your summer work.

Useful resources:

Alongside Isaac Physics, there are some other useful online resources that you can use to support your study on the A level Physics course.

Kerboodle - <https://www.kerboodle.com/users/login>

Using your kerboodle login from GCSE, you will now have access to the A level course, including the digital textbook.

Physics and Maths tutor - <https://www.physicsandmathstutor.com/>

Here you will find revision notes and past paper questions arranged by topic. You can revise GCSE topics or look ahead to what will be covered on the A level course.

Seneca - <https://www.senecalearning.com/>

Login to Seneca as you did for GCSE, select “Classes & Assignments”, then “Join Class” and enter this code: ***oj8eoqhysg***

I have set one assignment linked to the taster lesson.

You can also use the courses tab to either review GCSE content or look ahead to the A level course.