

Chemistry

A Level

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Exam Board: OCR



What is this subject about?

Chemistry is the study of how the elements and their compounds behave. It overlaps with Physics and Biology as chemical principles underpin the physical environment in which we live, as well as all biological systems. In this course you will develop essential knowledge and understanding of fundamental chemical concepts, as well as a variety of areas of chemistry, and you will get to grips with how these relate to each other. You will also develop a deeper appreciation of how chemistry plays a major role in providing the comfortable modern lifestyle we appreciate and how it contributes to the success of the economy and to society more broadly.

For the AS level you will study:

In the first year you begin by studying chemical concepts and theories that bridge your knowledge between GCSE and AS level before building on this knowledge and understanding further. You will also apply your knowledge to the study of the chemistry of fuels, including the contribution chemists make to the development of better and greener fuels, as well as to important chemical processes occurring in the atmosphere which relate to the ozone layer and the greenhouse effect. You also study the development of polymers and carry out three practical assessments during the year.

For the A2 level you will study:

A2 Chemistry builds on your knowledge and understanding of AS Chemistry. There is a particular focus on how amino acids are the building blocks of polypeptides and proteins, on the preparation of synthetic condensation polymers, on the importance of synthetic organic chemistry (for example in the design and development of drugs in the pharmaceutical industry) and on the chemistry of fuel cells and renewable resources. You will also carry out three practical assessments.

How is the course assessed?

Over the two years, practical coursework is worth 20% and written examinations are worth 80%.

What skills will I need and develop in this course?

You will need numerical, problem solving and communication skills, which you will develop further. You will also develop your practical and research skills – i.e. how to find relevant scientific information and how to analyse and evaluate scientific data.

Subject combination advice:

We strongly advise you to take Maths and another science subject (Biology if you are considering medicine) as many science degree courses related to Chemistry 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 chemistry, chemical engineering, medicine, veterinary science, dentistry, physiotherapy and related subjects such as pharmacy, pharmacology and biomedical sciences. It is also highly recommended for other sciences. This course also provides a valuable education if you take chemistry no further but wish to pursue a career in, for example, finance, publishing, patent law.

What are the formal entry requirements for this course?

A level Chemistry is a strongly theory based course that is assessed by exams and builds directly on GCSE work in Chemistry 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. We will be flexible to particular individual circumstances where this is appropriate. However to ensure you have a reasonable chance of success our recommendation is at least **BB in GCSE Science and Additional Science (or B in GCSE Chemistry with other sciences at C grade or better) together with C in GCSE Maths (Higher Level)**. Applied Science or Additional Applied Science or non-GCSE Science qualifications are not suitable as preparation for A level study.

Are there alternative routes forward in Science?

If you are headed towards Science but are finding it tough going to achieve GCSEs at the level we recommend, you should be looking at Applied A level or BTEC/OCR National Science as well. Applied A level and BTEC/OCR National courses provide well established routes to university and employment. The difference is that they are assessed by coursework and you can check your work with your teachers as you go along. You don't have to solve problems under exam conditions at the end relying on memory work. At Esher we offer these courses in Health & Social Care, Media, Sports & Leisure and Art & Design. Larger colleges offer these courses in Science as well. However these are popular courses and fill up quickly. You need to apply for them now to have a place on one of them should you need it when you get your GCSE results.

What extra support / enrichment activities are on offer?

You will be encouraged to attend the lunchtime chemistry clinics or scheduled subject tutorials for assistance when required. We encourage students to attend a Chemistry Lecture day held at the University of London as well as other lectures that will enable you to extend your knowledge and interest in chemistry beyond the syllabus. We try to arrange for you to spend a day at a university to get hands-on experience with various spectroscopic techniques that are not available here at the college. You will also be alerted to relevant "taster" courses at various universities, especially those related to chemistry, medicine, veterinary science and dentistry.

Why should I consider taking an A level in Chemistry?

It will enable you to develop a wide range of transferable skills. It will also help develop your interest and enthusiasm for chemistry, including developing your interest in further study and careers in chemistry. It will help you appreciate how society makes decisions about scientific issues and how the sciences contribute to the success of the economy and society. Chemistry has a great capacity to solve many of the global challenges that society faces in the 21st Century, including energy, food, climate change and health care. A new generation of chemists and scientists will be involved in tackling these global challenges. If you want to enhance your understanding and be in a position to make a difference, then Chemistry is for you.



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