



# CHEMISTRY

When you wake up, you start doing Chemistry. You were doing Chemistry the entire time you were asleep. In fact, you've been doing Chemistry since the moment you were conceived and you will continue to do Chemistry until the day your energy and matter are redistributed into the Universe. Yes...you will continue to do Chemistry long after you've gone. Chemistry explains why an egg changes when you fry them and why your non-stick pan is non-sticky. Chemistry explains how soap and shampoo make you clean, why you feel tired before coffee and alert after it, and how the petrol in your car gets you to work.

Chemistry is truly the 'central science'. It is sometimes known as this because it helps to connect physical sciences, like Maths and Physics, with applied sciences, like Biology, Medicine and Engineering. New breakthroughs in fields such as genetics, biochemistry, medicine, materials science, forensics, nanotechnology, drug discovery, the environment and next-generation computer hardware are all driven by chemistry.

Chemistry is about the molecules all around us. It is about matter: specifically how matter changes.

Reading a degree in Chemistry will allow you to learn about why the things around us behave in the way that they do. A sound knowledge of chemistry is required to fully understand most other areas of Science, and this is why the study of Chemistry is either compulsory or recommended by many other disciplines at university. Chemistry will help in your study of other sciences and technical subjects including: Maths, Physics, Biology, Engineering, IT, Psychology, Geography and Geology. But study it alongside a Modern

Language or an essay subject like History, English or Philosophy at A-level and you will have even more options for courses and careers.

Chemistry is usually required for degree courses in: Biochemistry, Chemical Engineering, Dentistry, Dietetics and Pharmacy. It is often needed or recommended for: Biology, Medicine, other types of Engineering, Geography, Environmental Sciences, Materials Science, Physiotherapy, Nursing, Sports Science, Psychology, Zoology and Veterinary Science.

Chemistry opens the door for many careers because it is essential for many positions in industry, is highly desirable for Science teaching, and is useful for careers in the public service and management. Both the public and the private sectors increasingly draw their higher management echelons from Chemistry graduates. If you want to understand the workings of the world around you – then Chemistry is for you.

## Is this the right subject for you?

- Do you enjoy practical laboratory work?
- Can you quickly and confidently write out a symbol equation for any named GCSE reaction?
- Are you someone who can cope fairly easily with Maths? (Predicted minimum 7 at GCSE)
- Are you intrigued by the science that you have studied so far, and prepared to work hard to find out more?  
(Predicted minimum 7 at GCSE Chemistry or 8/8 in Combined Science)
- Would you like to develop analytical skills which can transfer to other facets of life?

## **The course**

### **Year 12**

In the first year you will cover topics such as atomic structure, bonding and redox followed by rates of reaction, organic chemistry and thermochemistry.

### **Year 13**

In your second year the topics are covered in even greater depth with more some additional and more technical topics such as acid/base chemistry, transition metals and electrochemistry. There is further emphasis on analytical techniques and industrial chemistry with lots of opportunities for practical work.

### **A-level Chemistry (Edexcel)**

The topics studied are widely inter-linked and the developing patterns are a distinguishing feature of this subject. The value of Chemistry to other subjects (e.g. Biology, Geology, Economics, Science in the Environment, Geography and Physics) and to wider applications (social and technological) are well-recognised aspects of the course.

### **How will your work be assessed?**

The course at A-level is linear; you will sit three exams at the end of Year 13 for A-level certification.

All students carry out practical work throughout the whole two-year course and all the lessons take place in Chemistry laboratories. You will carry out 16 core practicals which will be assessed by your teachers. If successful, you will be awarded a Practical Endorsement, which is reported on the A-level certificate in addition to the overall grade.

Remember, there is always someone to ask when you need help, whether a friend from your own year group, a Year 13 mentor or, a member of the Chemistry staff.

Above all, we want our students to enjoy Chemistry and be successful.

## **Chemistry A-level and beyond**

Potential employers value the analytical and conceptual skills that are developed during the study of Chemistry. Such skills, coupled with the ability to work in a meticulous and accurate manner, enable chemistry students to pursue careers within, or outside, the vast area of science.

A large number of our students move on into areas such as Applied Chemistry, Chemical Engineering, Medicine, Dentistry, Pharmacy, Biotechnology and Environmental Science.

If you want any science-based career, then keep your options open with Chemistry.