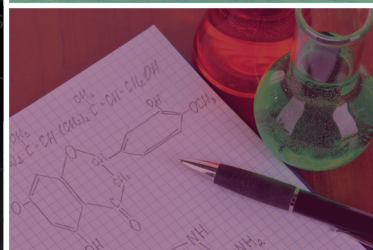


Chemistry

Chemistry is a subject of global impact. As a fundamental science it has a profound effect on our planet and is involved in nearly every facet of everyday life.

Almost every new technological change and important discovery has its foundations in chemistry. Chemists are the key to influencing life and making the world a better place to live in.



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Austin Friars exists to provide excellent education inspired by our Augustinian values.

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AUSTIN FRIARS

Studying Chemistry should be a stimulating and motivating experience for students. This course contains practical activities embedded within each unit, to reflect the nature of chemistry. It increases students' enjoyment and understanding of chemistry while providing them with the skills needed to study science at higher levels. Students will study aspects of chemistry that are often in the media and affect their lives including climate change, green chemistry and pharmaceuticals.

In the L6th, the Pearson Edexcel course provides opportunities for students to develop the basic chemical skills of formulae writing, equation writing and calculating chemical quantities. Atomic structure introduces s, p, and d orbitals and shows how electron configurations can account for the arrangement of elements in the periodic table. The three types of strong chemical bonding (ionic, covalent and metallic) are introduced, as is intermediate types of bonding and the nature of intermolecular forces. During the study of energetics, the students learn to define, measure and calculate enthalpy changes and see how a study of enthalpy changes can help explain chemical bonding. Organic chemistry is also introduced with students studying alkanes, alkenes, alcohols, halogenoalkanes and modern analytical techniques. Study of the periodic table covers groups 2 and 7 with ideas about redox being applied to the reactions of halogens and their compounds. The unit develops understanding of the ways in which chemists can control the rate of chemical change.

The U6th part of the course makes a further study of chemical kinetics. The topics of entropy and equilibria show how chemists are able to predict the direction and extent of chemical change. The organic chemistry covers carbonyl compounds, carboxylic acids and their derivatives, arenes and organic nitrogen compounds such as amines, amides, amino acids and proteins. Further study of redox includes electrode potentials and transition metals. More complex modern analytical chemistry finishes the course.

There will be three written examinations covering the material from the entire course:

Paper 1: Advanced Inorganic and Physical Chemistry (1 hour 45 minutes)

Paper 2: Advanced Organic and Physical Chemistry (1 hour 45 minutes)

Paper 3: General and Practical Principles in Chemistry (2 hours 30 minutes)

Entry Requirements:

Students would normally be expected to have achieved at least a Grade 6,6 or 6 result in the Combined GCSE Science or GCSE Chemistry respectively. Students should have a basic competence in mathematics and be able to express themselves clearly in English, both verbally and on paper. A "chemist" needs to have an enquiring mind, be able to think logically, write clearly, handle figures and to have manual dexterity. In other words, a chemist is an extraordinarily complete individual!

University and Careers:

Chemistry is not a static subject; rather it is always changing and expanding as new ideas are developed. It overlaps with many other subjects without any sharp dividing line, and a knowledge of chemistry can be expected to contribute to a better understanding in many fields (this is reflected in the A Level entrance requirements for many university courses in pure and applied sciences).

Chemistry is a necessity for most Medicine, Pharmacy and Veterinary Science courses, it will be a distinct advantage for Agriculture, Environmental and Biologically based courses, and will continue to be more than acceptable for Law, Accountancy, Business studies and Geography courses.

Recommended Combinations:

- with MATHEMATICS and PHYSICS, it offers the broadest possible science combination and almost all science courses should be possible.
- with BIOLOGY and PHYSICS, it offers a very secure basis for medicine, veterinary, ecological and applied biological courses.
- with BIOLOGY and GEOGRAPHY, it sets students well for environmental and geological courses.

These are by no means exclusive and many other combinations are possible. Chemistry provides a secure foundation for many key areas of study and this means that a chemistry qualification is likely to enhance career prospects for the foreseeable future.