

Chemistry

A level

What will I study and learn?

The two-year course provides a solid foundation in the three main branches of chemistry:

Physical chemistry: atomic structure; amount of substance; bonding; energetics; kinetics; chemical equilibria and Le Chatelier's principle; oxidation, reduction and redox equations; thermodynamics; rate equations; equilibrium constant K_c for homogeneous systems; electrode potentials and electrochemical cells; and acids and bases.

Inorganic chemistry: periodicity; Group 2 – the alkaline earth metals; Group 7 (17) – the halogens; properties of Period 3 elements and their oxides; transition metals; reactions of ions in aqueous solution.

Organic chemistry: introduction to organic chemistry; alkanes; halogenoalkanes; alkenes; alcohols; organic analysis; optical isomerism; aldehydes and ketones; carboxylic acids and their derivatives; aromatic chemistry; amines; polymers; amino acids, proteins and DNA; organic synthesis; and nuclear magnetic resonance spectroscopy.

How will I be assessed?

You will sit three two-hour written papers covering all of the main topics as well as practical techniques and data analysis. An endorsement of practical skills will be taken alongside the A level. This will be based on direct observation of your competencies in a range of skills.

What skills should I have and what will be developed?

The course has been designed to stimulate interest and enjoyment of the study of chemistry, and to enable students to acquire a basis for further study and employment. Through practical work you will develop your ability to collect, present and interpret data. The course thus promotes an appreciation of the way chemistry may be used to solve problems and how it should be used responsibly.

Want to know more?

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Exam Board:
www.aqa.org.uk
www.ibo.org

A level/IB

Chemistry is concerned with the science of matter and helps us to relate its structure and bonding to its physical properties and reactions. It is often called the central science as chemical principles underpin both the physical environment and all biological systems.

The Department will offer you the chance to stretch yourself by entering the Lower Sixth Cambridge Chemistry Challenge and the RSC Chemistry Olympiad. Our proximity to The School of Chemistry at the University of Bristol gives access to a range of visiting speakers and events.

Chemistry is involved in every manufacturing industry and forms a basis for medicine, agriculture and environmental work. Chemistry is an essential entry requirement for undergraduate studies in Dentistry, Medicine and Veterinary Science. It is also necessary for further studies in areas such as Biochemistry, Pharmacy, Forensic Science, Food Technologies, Environmental Science and Nanotechnology.

Russell Group universities classify Chemistry as a facilitating subject in recognition that the study of it leads to such a wide range of options at university.



IB

What will I study and learn?

The IB course explores Chemistry through the main themes of structure and reactivity of different forms of matter and the specific links between them. The standard level course follows the same principles but with reduced content.

What skills should I have and what will be developed?

The IB course helps you develop a deeper understanding of the nature of science through an appreciation of the wider implications of using chemistry in the real world, how the chemistry community works and how chemical knowledge has been acquired.

How will I be assessed?

External assessment by written examination comprises 80% of the course weighting at both Higher and Standard level:

Paper 1: multiple choice and data-based questions (36%)

Paper 2: short answer and extended-response questions (44%)

Practical Work & Coursework

Regular practical work is a key component of the IB Chemistry courses.

Internal assessment: consists of one task: the scientific investigation 20%

This component is internally assessed by the teacher and externally moderated by IB at the end of the course.

Entry requirements

You should achieve a grade 7 or above in GCSE Chemistry to study A level or the IB HL course. A grade 6 is a recommended minimum grade for the SL course, provided you have shown consistent application to this subject previously. A grade 7 in Mathematics is also recommended with a minimum of a grade 6.

“Chemistry has expanded my current knowledge which is built upon through the practicals we carry out. The department have fabulous resources and the teachers are approachable and always happy to help.

Hope Vardakis, OB 2019

Courses: Mathematics, Biology and Chemistry