

A-Level Chemistry

Overview:

Exam Board. AQA

A-level Chemistry attempts to answer the big question 'what is the world made of' and it's the search for this answer that makes this subject so fascinating. From investigating how one substance can be changed drastically into another, to researching a new wonder drug to save millions of lives, the opportunities that chemistry provides are endless.

Content:

Key Units/ Content

First year	Second year
Physical chemistry Including atomic structure, amount of substance, bonding, energetics, kinetics, chemical equilibria and Le Chatelier's principle	Physical chemistry Including thermodynamics, rate equations, the equilibrium constant K_p , electrode potentials and electrochemical cells
Inorganic chemistry Including periodicity, Group 2 the alkaline earth metals, Group 7 the halogens	Inorganic chemistry Including properties of Period 3 elements and their oxides, transition metals, reactions of ions in aqueous solution
Organic chemistry Including introduction to organic chemistry, alkanes, halogenoalkanes, alkenes, alcohols, organic analysis	Organic chemistry Including optical isomerism, aldehydes and ketones, carboxylic acids and derivatives, aromatic chemistry, amines, polymers, amino acids, proteins and DNA, organic synthesis, NMR spectroscopy, chromatography

Key Skills

Practicals - you will carry out practical activities including:

- measuring energy changes in chemical reactions
- tests for identifying different types of compound
- different methods for measuring rates of reaction
- studying electrochemical cells
- preparation of organic solids and liquids
- an advanced form of chromatography for more accurate results.

Mathematics – you will need to begin with good GCSE mathematics to skills to succeed in chemistry and you will build your skills during the course.

Thinking skills – you will need to demonstrate knowledge and understanding of scientific ideas and apply this knowledge in unfamiliar contexts. You will need to analyse, interpret and evaluate scientific information.

Entry Requirements:

The minimum entry requirements are two grade 6s in GCSE sciences. This could be in separate sciences, or combined science. You will also need at least a 5 in Maths.

How Assessed:

How many exams

There are three exams at the end of the two years for A-level, all of which are two hours long.

Breakdown of marks

Paper 1- 105 marks (35%)

Paper 2 – 105 marks (35%)

Paper 3 – 90 marks (30%) – of which 30 marks are multiple choice.

15% of total marks will be based on the practicals studied over the course.

20% of total marks are based on mathematics (*require mathematical skills equivalent to Level 2 or above*).

Coursework

There is no coursework on this course. However, there are required practicals throughout the course which you will need to successfully complete.

Progression:

Careers.

Achieving an A- level in chemistry shows that you are intelligent, logical, practical and imaginative. Even if you don't end up as a scientist, the skills you develop will be relevant to a wide range of careers and courses. Progressing to a chemistry related degree at university gives you all sorts of exciting career options, including:

- Analytical chemist
- Chemical engineer
- Clinical biochemist
- Pharmacologist
- Doctor
- Research scientist
- Toxicologist
- Chartered certified accountant
- Environmental consultant
- Higher education lecturer
- Patent attorney
- Science writer

University Courses.

According to AQA the top five degree courses taken by students with an A-level in chemistry are chemistry, biology, pre-clinical medicine, mathematics, and pharmacology. Outside of these, chemistry is of course a highly respected A-level qualification and allows progression to a wide variety of courses and careers. In particular, most universities insist that applicants to medicine or veterinary medicine have taken chemistry.

Links with other subjects.

Mathematics, further mathematics, physics and biology are all excellent partners to chemistry. We do not require that you take mathematics alongside chemistry, although many students do choose to.

Key Words:

Other names the course may have:

Chemistry

Science