

# AS and A-level Chemistry

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.

## Possible degree options

According to **bestcourse4me.com**, the top five degree courses taken by students who have an A-level in Chemistry are:

- Chemistry
- Biology
- Pre-clinical medicine
- Mathematics
- Pharmacology.

## Possible career options

Studying an A-level Chemistry related degree at university gives you all sorts of exciting career options, including:

- Analytical chemist
- Chemical engineer
- Clinical biochemist
- Pharmacologist
- Doctor
- Research scientist (physical sciences)
- Toxicologist
- Chartered certified accountant
- Environmental consultant
- Higher education lecturer
- Patent attorney
- Science writer
- Secondary school teacher.

Find out more  
[aqa.org.uk/science](http://aqa.org.uk/science)



## Topics covered

AS Chemistry lasts one year, with exams at the end.

A-level Chemistry lasts two years, with exams at the end of the second year. The table below shows what you'll learn in each year.

AS and first year of A-level	Second year of A-level
<b>Physical chemistry</b> Including atomic structure, amount of substance, bonding, energetics, kinetics, chemical equilibria and Le Chatelier's principle	<b>Physical chemistry</b> Including thermodynamics, rate equations, the equilibrium constant $K_p$ , electrode potentials and electrochemical cells
<b>Inorganic chemistry</b> Including periodicity, Group 2 the alkaline earth metals, Group 7(17) the halogens	<b>Inorganic chemistry</b> Including properties of Period 3 elements and their oxides, transition metals, reactions of ions in aqueous solution
<b>Organic chemistry</b> Including introduction to organic chemistry, alkanes, halogenoalkanes, alkenes, alcohols, organic analysis	<b>Organic chemistry</b> Including optical isomerism, aldehydes and ketones, carboxylic acids and derivatives, aromatic chemistry, amines, polymers, amino acids, proteins and DNA, organic synthesis, NMR spectroscopy, chromatography

## Practicals

Chemistry, like all sciences, is a practical subject. Throughout the course 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.

## Exams

There is no coursework on this course. However, your performance during practicals will be assessed.

There are three exams at the end of the two years for A-level, all of which are two hours long. At least 15% of the marks for A-level Chemistry are based on what you learned in your practicals.

The AS has two exams at the end of the year. Both are 1 hour 30 minutes long.

## Entry requirements

Every school and college sets its own entry requirements. A-level Chemistry builds on the work done in GCSE Science and Maths, so you'll need good GCSE results from both. Written communication is also important and you'll need to be a strong writer. If you're interested in studying Chemistry after your GCSEs, ask your teacher about the qualifications you'll need.

“The meeting of two personalities is like the contact of two chemical substances: if there is any reaction, both are transformed.”

C.G. Jung, Swiss psychiatrist and psychotherapist