



CHEMISTRY

Examination Board: AQA
Specification: Advanced GCE 7405
QAN code 601/5731/8

Why should I study Chemistry?

This gives an opportunity for students to further their chemical knowledge, understanding and skills. It also helps with access to higher education, employment and general career development.

What will I learn about? (This is the A Level outline)

3.1 Physical chemistry

- 3.1.1 Atomic structure
- 3.1.2 Amount of substance
- 3.1.3 Bonding
- 3.1.4 Energetics
- 3.1.5 Kinetics
- 3.1.6 Chemical equilibria and Le Chatelier's principle
- 3.1.7 Oxidation, reduction and redox equations
- 3.1.8 Thermodynamics
- 3.1.9 Rate equations
- 3.1.10 Equilibrium constant K_c for homogeneous systems
- 3.1.11 Electrode potentials and electrochemical cells
- 3.1.12 Acids and bases

3.2 Inorganic chemistry

- 3.2.1 Periodicity
- 3.2.2 Group 2, the alkaline earth metals
- 3.2.3 Group 7(17), the halogens
- 3.2.4 Properties of Period 3 elements and their oxides

- 3.2.5 Transition metals
- 3.2.6 Reactions of ions in aqueous solution

3.3 Organic chemistry

- 3.3.1 Introduction to organic chemistry
- 3.3.2 Alkanes
- 3.3.3 Halogenoalkanes
- 3.3.4 Alkenes
- 3.3.5 Alcohols
- 3.3.6 Organic analysis
- 3.3.7 Optical isomerism
- 3.3.8 Aldehydes and ketones
- 3.3.9 Carboxylic acids and derivatives
- 3.3.10 Aromatic chemistry
- 3.3.11 Amines
- 3.3.12 Polymers
- 3.3.13 Amino acids, proteins and DNA
- 3.3.14 Organic synthesis
- 3.3.15 Nuclear magnetic resonance spectroscopy
- 3.3.16 Chromatography



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How will I be taught?

A variety of teaching styles are used within the department including ICT, observational practicals, investigative practical work which is an important element of the double lessons.

Application beyond school:

Chemistry is an essential A Level for university courses in pharmacy, medicine and many biological subjects. There are also many Chemistry courses, usually linked with other options e.g. Chemistry with a Modern Language, Chemistry with Psychology, Chemistry with Pharmacology, Chemistry with Business Studies. Graduate chemists enter many other fields which may seem unlikely such as Helen Sharman who became an Astronaut and Margaret Thatcher who went on to be Prime Minister. Chemistry can also be helpful with medical research and high finance careers.

Assessment Format:

| Level | Component | Requirements | Duration | Marks |
|---------|----------------------|---|--------------------|-----------------------|
| A Level | Paper 1 | 3.1.1 to 3.1.4, 3.1.6 to 3.1.8 and 3.1.10 to 3.1.12 3.2 | 2 hours Year 13 | 105 35% of A Level |
| A Level | Paper 2 | 3.1.2 to 3.1.6 and 3.1.9 3.3 | 2 hours Year 13 | 105 35% of A Level |
| A Level | Paper 3 | All content | 2 hours Year 13 | 90 30% of A Level |
| A Level | Practical Assessment | 12 set practicals throughout the course. 15% of paper 1 and 2 examinations will assess practical skills. 40 marks out of 90 on paper 3 will assess practical techniques and data analysis | | |
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Are there any special requirements?

You would be required to have a grade 9, 8 or 7 at GCSE or 77 minimum in Core and Additional Science.

It is also important that you have at least a grade 6 in Higher Mathematics.

There are certain aspects of the course which require Mathematical application.

Love of Learning, pride in diversity, excellence for all