



Chemistry

Course details.

AS Level Chemistry

At the end of the AS course there are two equally weighted exams of 1 hour 30 minutes covering work from the four modules detailed below. The first has multiple choice questions and short answer ones; the second requires short and long answers. The questions examining work from module 1 will be based on the practicals you do as part of the course.

Module 1:

Development of Practical Skills in Chemistry. There is no grading of practical in Year 12 but the experiments done will count towards the A2 practical endorsement. This is a statement of your ability as a practical chemist reported separately to your A level grade.

Module 2:

Foundations in Chemistry. In this module you will study atomic structure in detail and learn how chemists calculate amount of substance. You will become confident with equations, and will study redox and acid-base reactions.

Module 3:

Periodic Table and Energy. This module covers periodicity and the chemistry of groups 1 and 7. Also covered are: calculation of energy changes in reactions; reaction rates; chemical equilibrium, and qualitative analysis.

Module 4:

In this module you will study the chemistry of carbon compounds covering basic concepts such as structure, reactivity and mechanism. This is followed by the specific chemistry of hydrocarbons, alcohols and haloalkanes. Synthesis and analysis (infrared spectroscopy and mass spectrometry) are also studied.

A Level Chemistry

In the A Level course there are two additional teaching modules. Assessment is by two exams of 2 hours 15 minutes, each carrying 37% of the marks. One covers physical and inorganic chemistry and the other deals with organic chemistry and synthesis. The other 26% is from a synoptic paper embracing all aspects of chemistry. There is also the practical endorsement, reported separately. Papers 1 & 2 assess content from modules 2, 3 & 5 and 2, 4 & 6 respectively. Paper 3 assesses content from modules 1 - 6. All three papers will have questions set based on considerations from module 1. This continues as a series of practicals contributing further to your practical endorsement.

Module 5:

Physical Chemistry and Transition Elements.

This involves a quantitative treatment of reaction rates and equilibrium. Buffers and pH are covered and you will study the relationships between enthalpy, entropy and free energy – ultimately you will be able to calculate the feasibility of a reaction proceeding. Redox potential and electrode potential will be studied, along with the chemistry of transition elements.

Module 6:

Organic Chemistry and Analysis.

This module builds on the material from module 4 to cover aromatic compounds, carbonyls, carboxylic acids and esters, nitrogen-containing compounds and polymers. Further synthesis is studied, and chromatography, molecular mass spectrometry and nuclear magnetic resonance (NMR) are covered.

Assessment:

Papers 1 & 2 assess content from modules 1, 2, 3, 5 and 1, 2, 4, 6 respectively.

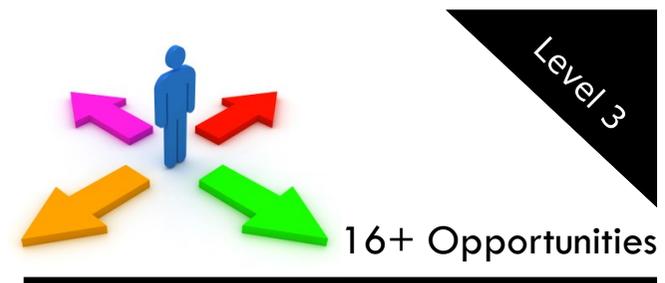
Paper 3 assesses content from all modules 1 - 6.

What could I go on to do after the course?

Science or any related science or engineering course. Chemistry is essential for studying medicine, pharmacy, veterinary science and dentistry.

It is highly regarded as a support subject for non-science subjects, particularly for entry to numerate or technical professions e.g. accounting and patent law.

Notes.



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A Level



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