



# CHEMISTRY

**Entry Requirement:** Grade 7-7 in Double Award Science or grade 7 in Triple Award Chemistry. A grade 7 or above in Mathematics is also required.

**Examination Board:** OCR H432

## Assessment:

Unit	Title	Modules Assessed	% of A Level	Duration	Marks
01	Periodic Table, Elements and Physical Chemistry	Content from modules 1,2,3 and 5	37% of A level	135 mins	100 marks
02	Synthesis and Analytical Techniques	Content from modules 1,2,4 and 6	37% of A level	135 mins	100 marks
03	Unified Chemistry	Content from all modules; 1-6	26% of A level	90 mins	70 marks
04	Practical Endorsement in Chemistry	Non exam assessed unit	Reported separately	60 mins	Non exam assessment

## Module Content

**Module 1 Development of practical skills in Chemistry** - Practical skills assessed in a written examination; planning, implementing, analysis and evaluating - Practical skills assessed in the practical endorsement; practical skills and use of apparatus and techniques.

**Module 2 Foundations in Chemistry** - Atoms, compounds, molecules and equations, amount of substance, acid-base and redox reactions, electrons, bonding and structure.

**Module 3 Periodic table and energy** - Periodicity, group 2 and the halogens, qualitative analysis, enthalpy changes, reaction rates and equilibrium (qualitative).

**Module 4 Core organic chemistry** - Basic concepts, hydrocarbons, alcohols and haloalkanes, organic synthesis, analytical techniques (IR and MS).

**Module 5 Physical chemistry and transition elements** - Reaction rates and equilibrium (quantitative), pH and buffers, enthalpy, entropy and free energy, redox and electrode potentials, transition elements.

**Module 6 Organic chemistry and analysis** - Aromatic compounds, carbonyl compounds, carboxylic acids and esters, nitrogen compounds, polymers, organic synthesis, chromatography and spectroscopy (NMR).

Quality of written communication and mathematical skills are assessed in all units and credit may be restricted if communication is unclear.

The course is delivered using a variety of resources; worksheets, text books, DVD's, and internet resources. Students are encouraged to research the subject matter and to discuss and explain topics in the classroom. There is also a large practical component where students undertake experiments, work out solutions and evaluate the evidence.

### **Practical Assessment**

Students will be required to complete 12 assessed practical activities across the 2 year A Level course. The practical work will be given a pass/fail. These have been set by the examination board and will also be assessed in the relevant examination papers.

Quality of written communication and mathematical skills are assessed in all units and credit may be restricted if communication is unclear.

### **Homework**

Homework is set regularly to reinforce topics covered in lessons. Exercises will be set using structured questions and also research topics. Students are expected to study independently.

### **Materials**

Textbooks (both OCR and additional textbooks), worksheets, past papers, CD and DVD's and practical resources.

### **Key Features**

In Chemistry, students will develop investigative and practical skills. They have to think about each topic and apply their knowledge to different examples. Students also have to learn how the subject is applied in the outside world. Other skills include: logical thinking, practical skills, communication, analysis, data handling and observation.

Studying Chemistry can open the door to a wide range of career options. These include: Medicine, Veterinary Medicine, Dentistry, Environmental Science, Nanotechnology, Forensics, Pharmaceuticals, Pharmacy, Biotechnology, Marine Chemistry, Teaching, Food Technology, Product Development, Health and Safety. Many Chemists will also work with other scientists and other professionals in marketing, law, ICT, languages and many others. Chemists can also go on to do further research in many areas.