

CHEMISTRY A-LEVEL

EXAM BOARD: OCR

COURSE DESCRIPTION:

Chemistry is an exciting and challenging course, developed to give students a thorough understanding into the concepts of today's changing chemical world. This is a highly recognised course by universities, because it encompasses manipulative, theoretical, numerical, ICT and problem solving skills.

It will help you to develop skills such as accuracy and precision, objectivity, enquiry, initiative and insight. It will help you to appreciate the contribution of chemistry to society and take an informed interest in scientific matters. It will teach you to apply knowledge, principles and concepts from different areas of the subject.

Chemistry is essential for the study of Medicine, Veterinary Science, Dentistry and Chemical Engineering. It is useful for careers in research, marketing and the pharmaceutical, agrochemical and food industries. Universities not only offer courses in Natural Sciences but also combine Chemistry with languages, Economics, ICT, Astronomy, Business Studies and Law.

COURSE CONTENT:

The course consists of 6 modules.

- **Module 1: Development of practical skills in chemistry**
Skills of planning, implementing, analysis & evaluation.
- **Module 2: Foundations in chemistry**
Includes: Atoms, compounds, molecules & equations; Amount of substance; Acid base & redox reactions; Electrons bonding & structure.
- **Module 3: Periodic table & energy**
Includes: The periodic table & periodicity; Group 2 & the halogens; Qualitative analysis; Enthalpy changes; Reaction rates & equilibrium (qualitative).
- **Module 4: Core organic chemistry**
Includes: Basic concepts; Hydrocarbons; Alcohols & haloalkanes; Organic synthesis; Analytical techniques (IR, MS).

- **Module 5: Physical chemistry & transition element**
Includes: Reaction rates & equilibrium (quantitative); pH & buffers; Enthalpy, entropy & free energy; Redox & electrode potentials; Transition elements.
- **Module 6: Organic chemistry & analysis**
Includes: Aromatic compounds; Carbonyl compounds; Carboxylic acids & esters; Nitrogen compounds; Polymers; Organic synthesis; Chromatography & spectroscopy (NMR).

ASSESSMENT:

- **Written Paper 1** - 2 hours 15 minutes. Periodic table, elements & physical chemistry. Weighting 37%.
- **Written Paper 2** - 2 hours 15 minutes. Synthesis & analytical techniques. Weighting 37%.
- **Written Paper 3** - 1 hour 30 minutes. Unified Chemistry.
- **Practical Endorsement** - internal.

FUTURE OPPORTUNITIES:

Agricultural Scientist, Art Restorer, Bacteriologist, Biochemist, Brewer, Chemical Engineer, Chemist, Civil Engineer, Conservationist, Cosmetics Scientist, Dentist, Doctor, Food Scientist, Forensic Scientist, Geologist, Marine Scientist, Materials Scientist, Metallurgist, Patent Lawyer, Pharmacist, Production Manager, Research Scientist, Scientific Officer, Sports Scientist, Teacher, Veterinary Surgeon, Zoologist.

ENTRY REQUIREMENTS:

A 66 or above in GCSE Science, and a Grade 6 in GCSE Maths. (For triple award students one 6 must be in the subject to be studied at A-Level).

