

CHEMISTRY



Teacher in charge of Chemistry: Miss E Leyshon

Teachers: Dr R Roberts, Miss Z Passariello

Examination Board: WJEC

Course Outline

Chemistry is fundamental to the very existence of life. Chemistry allows us to understand how atoms join together to make molecules that are the very fabric of our existence. If it was not for Chemistry there would be no medicines, plastics, fuels, dyes, clothes and no awareness of the existence of global warming. The aim of Chemistry is to plan experiments and produce explanations and new ideas to deal with the World's big issues, including climate change, alternative fuels, fighting disease and developing new polymers. The world is full of Chemistry and Chemists who are responsible for almost everything we come into contact with in our everyday lives.

Entry Requirements

This course will suit students with enquiring minds who have good analytical, numerical and communication skills. Students interested in the world around them and how they can bring about change will enjoy this course as it deals with many important issues facing our world today. An ability to organise yourself, plan, and meet deadlines is also important. Many of the skills you will learn are transferable skills such as recording, observing, written communication and problem solving and so will help you in many of your other subjects.

Within each of the units throughout AS and A2 there are opportunities for the learners to develop their mathematical skills, carry out specified practical work and to use skills to enable them to see 'How Science Works'.

What Will I Study?

AS CHEMISTRY

UNIT 1: THE LANGUAGE OF CHEMISTRY, STRUCTURE OF MATTER AND SIMPLE REACTIONS

Written examination: 1 hour 30 minutes

20% of qualification

This unit covers the following areas of study:

- Formulae and equations
- Basic ideas about atoms
- Chemical calculations
- Bonding
- Solid structures
- The Periodic Table
- Simple equilibrium and acid-base reactions.

UNIT 2: ENERGY, RATE AND CHEMISTRY OF CARBON COMPOUNDS

Written examination: 1 hour 30 minutes

20% of qualification

Within this unit you will study:

- Thermochemistry
- Rates of reaction
- The wider impact of Chemistry
- Organic compounds
- Hydrocarbons
- Halogenoalkanes
- Alcohols and carboxylic acids
- Instrumental analysis.



A2 CHEMISTRY

UNIT 3: PHYSICAL AND INORGANIC CHEMISTRY

Written examination: 1 hour 45 minutes

25% of qualification

Whilst studying for this unit you will cover:

- Redox and standard electrode potential
- Redox reactions
- Chemistry of the p-block
- Chemistry of the d-block transition metals
- Chemical kinetics
- Enthalpy changes for solids and solutions
- Entropy and feasibility of reactions
- Equilibrium constants
- Acid-base equilibria.

UNIT 4: ORGANIC CHEMISTRY AND ANALYSIS

Written examination: 1 hour 45 minutes

25% of qualification

During the course of this unit you will study the following areas:

- Stereoisomerism
- Aromaticity
- Alcohols and phenols
- Aldehydes and ketones
- Carboxylic acids and their derivatives
- Amines
- Amino acids, peptides and proteins
- Organic synthesis and analysis.

UNIT 5: PRACTICAL EXAMINATION

Experimental Task and Practical Methods and Analysis

Task: 4 hours

10% of qualification

This unit gives learners the opportunity to demonstrate their skills, knowledge and understanding in relation to practical techniques and their ability to analyse and evaluate experimental data.

How Will I Be Assessed?

During the course a process of continual assessment takes place through homework tasks, end of topic tests and practical activities. For each of the Units the breakdown is as follows:

UNIT 1 Written examination: 1 hour 30 minutes
20% of qualification

UNIT 2 Written examination: 1 hour 30 minutes
20% of qualification

UNIT 3 Written examination: 1 hour 45 minutes
25% of qualification

UNIT 4 Written examination: 1 hour 45 minutes
25% of qualification

UNIT 5 Experimental Task and Practical Methods and Analysis Task: 4 hours
10% of qualification

Career Opportunities And Progression

A Level Chemistry can lead to a wide range of possible careers, such as medicine, veterinary science, dentistry, the food industry, chemicals industry, pharmaceuticals, agriculture, environmental science, not forgetting teaching, nursing and many others. For further information please contact: Miss E Leyshon.