Chemistry A Level (AQA)

Programme of Study:

Year 1

1. Physical chemistry
- a. Atomic structure
- b. Amount of substance
- c. Bonding
- d. Energetics
- e. Kinetics
- f. Chemical equilibria, Le Chatelier's principle and Kc
- g. Oxidation, reduction and redox equations

2. Inorganic chemistry
- a. Periodicity
- b. Group 2, the alkaline earth metals
- c. Group 7(17), the halogens

3. Organic chemistry
- a. Introduction to organic chemistry
- b. Alkanes
- c. Halogenoalkanes
- d. Alkenes
- e. Alcohols
- f. Organic analysis

Year 2

4. Physical chemistry a. Thermodynamics b. Rate equations
- c. Equilibrium constant Kp for homogeneous systems
- d. Electrode potentials and electrochemical cells Acids and bases

5. Inorganic chemistry
- a. Properties of Period 3 elements and their oxides
- b. Transition metals
- c. Reactions of ions in aqueous solution

6. Organic chemistry
- a. Optical isomerism
- b. Aldehydes and ketones Carboxylic acids and derivatives
- c. Aromatic chemistry d. Amines
- e. Polymers
- f. 3.3.13 Amino acids, proteins and DNA
- g. Organic synthesis
- h. Nuclear magnetic resonance spectroscopy
- i. Chromatography

Assessment

Paper 1 - Relevant Physical and Inorganic Chemistry, including relevant practical skills
Written exam: 2 hours. 105 marks. 35% of A-level
Paper 2 - Relevant Physical and Organic Chemistry, including relevant practical skills
Written exam: 2 hours. 105 marks. 35% of A-level
Paper 3 - Any content and any practical skills
Written exam: 2 hours. 90 marks. 30% of A-level

Entry Requirements

6 in Chemistry if studying Triple Science at GCSE or G66 if studying Combined Science at GCSE

Recommended Reading and Subject Enrichment

There are many popular science titles and journals that will give you a broader range of understanding of A-level chemistry.

The Pleasure of Finding Things Out - Richard Feynman Periodic Tales - Hugh Aldersey-Williams The Disappearing Spoon - Sam Kean Uncle Tungsten - Oliver Sachs The Shocking History of Phosphorus: A Biography of the Devil's Element - John Emsley

As part of the course we run many enrichment activities:

The Chemistry Olympiad and the Summer Exhibition at the Royal Society where they get to meet research scientists.

Higher Education and Career Pathways

Students who study Chemistry often choose to pursue a career as a chemical Engineer, forensic scientist, geochemist, materials scientist and pharmacologist.

Complimentary Subjects

Maths, Biology, Physics