

CHEMISTRY

| | |
|---------------------------|--|
| Qualification Level | A level |
| Exam Board/ Specification | OCR Chemistry A |
| Contact | Mr Roberts/ Mr Fowler |
| Contact email address | aiden.roberts@ewsacademy.org.uk darran.fowler@ewsacademy.org.uk |

Why study this course?

Chemistry is the fascinating study of all matter, and possibly the oldest recognisable practical science with roots in the alchemy of the middle ages.

In Chemistry you will analyse, evaluate and explain results and observations. You will need to imagine chemicals being made of particles that you cannot see and understand what happens when those particles interact with energy and how they form new and different chemicals.

Modern chemists play a vital role in our society designing new materials for our phones and clothes, discovering new drugs for medical treatments and even new smart materials.

Due to the nature of the subject, chemistry is an excellent partner with Biology or Physics, or as a standalone A-Level.

Course content

Year 12 Chemistry

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 • The periodic table and 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)

Year 13 Chemistry

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)

Practical Skills

Module 1 – Acid-base titration, enthalpy determination, qualitative analysis of ions, organic synthesis and analysis.

Exam/ Assessment structure

There are two exams for year 12, and 3 for year 13.

Practical Skills assessed throughout the two years.

Higher education/ career links

Medicine

Veterinary medicine

Engineering

Pharmacology

Biomedical science and other professions allied to medicine

Nursing

Chemistry

Petrochemical industry

Specific equipment or resources required

Scientific calculator

Entry requirements

Science: Minimum of 6,6 (combined) or 6,6,6 (triple / separate science)

Maths: 6