CARDINAL NEWMAN CATHOLIC SCHOOL

A Level - Chemistry

Overview:

Chemistry is a subject that offers students the opportunity to learn all aspects of chemistry, practical as well as theoretical. Students will be expected to apply their knowledge of their GCSE Chemistry course from the word go and develop the ideas they have met in it to gain a deeper understanding of elements, compounds and their reactions. Students will need to apply mathematical ideas to all aspects of this course. It is a demanding course requiring students to be fully committed to working hard and learning their work thoroughly as they go through the course. It requires a good memory, ability to apply knowledge to new situations and good mathematical ability. If you want to do medicine or any Science based course this is the A-Level choice for you!

Assessment Overview - This is a 2 year course with all assessments at the end of the second year. Learners must complete all components (01, 02, 03 and 04). Content is split into 6 teaching modules.

Module 1 - Development of practical skills in chemistry - 37%

Periodic table, elements and physical chemistry (01)

100 marks 2 hours 15 minutes written paper

Module 2 - Foundations in chemistry - 37%

Synthesis and analytical techniques (02)

100 marks 2 hours 15 minutes written paper

Module 3 - Periodic table and energy - 26%

Unified chemistry (03)

70 marks 1 hour 30 minutes written paper

Module 4 - Core organic chemistry, Module 5 - Physical

Head of Department

Mrs Raza

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ENTRY REQUIREMENTS

You need to have achieved at least a 6-6 in GCSE Science or a 6 in GCSE Chemistry.

You also require a 6 in GCSE Mathematics GCSE and at least a 4 in GCSE English then overall 5 GCSEs of 5 or above.

When considering A level Chemistry it is important to realise that 20% of the final exam mark is based on mathematical skills so a sound knowledge of GCSE Mathematics is essential. You also have to be able to write in a logical, coherent and concise manner for the practical aspect of the course.

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What will I study?

Module 1 - Development of practical skills in chemistry
- Practical skills assessed in a written examination
- Practical skills assessed in the practical endorsement

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 halo alkanes
- 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

POSSIBLE CAREER OPTIONS

A-Level Chemistry plays a crucial role in unlocking a wide range of career prospects for individuals. This subject provides a solid foundation in understanding the fundamental principles of chemistry, which is essential in various industries and fields.

With a strong grasp of A Level chemistry, individuals can pursue careers in areas such as:

- Medicine
- Dentistry
- Forensic chemistry
- Geochemistry
- R & D management
- Pharmacy
- Chemical engineering
- Petroleum engineering
- Perfumery
- Analytical chemist
- Biotechnologist
- Clinical biochemist
- Forensic scientist