POST 16 SUBJECT OVERVIEW

Post 16 Subject Overview

Name of Subject - A-level Chemistry

Which Examination Specification is Studied for this Course? AQA

Why should I study this course? - *Chemistry allows pupils to study the properties and structure of different substances. There are chemical reactions used in various different industries that make the wide variety of products needed for modern life. Students have the opportunity to complete practical work that allows them to study various aspects of chemistry.*

There are many different careers available to students who have studied Chemistry, such as:

- *Forensic scientist*
- *Biomedical Scientist*
- *Pharmacologist*
- *Chemical engineer*
- *Dentist*

A qualification in Chemistry will allow students to gain access to many degree courses that facilitate the careers above.

Who is suitable to study this course? -
Students who enjoyed studying Chemistry at GCSE will enjoy delving deeper into the subject at A-level. Students who want to study the other Sciences and/or Maths should consider taking Chemistry as it works well alongside these subjects. Students considering the careers mentioned above will find a qualification in Chemistry beneficial.

What GCSE Qualifications Support the Study of this Course?
Students should have a good pass in GCSE Combined Science or GCSE Chemistry. The course has a high level of numeracy involved, so a GCSE in Maths is also required.

What are the Qualification Requirements for this Course?

GCSE Combined Science or GCSE Chemistry (Grade 6)
GCSE Mathematics (Grade 6)

How is the Course Delivered? -

Students have 5 hours of lessons in the classroom each week. It is recommended that they dedicate the same amount of time to independent study.

Students also complete 12 required practicals that are assessed and make up a practical endorsement. Practical skills are also assessed in the examinations.

Subject Overview		
Half Term	**Year 12**	**Year 13**
Autumn 1	Amount of Substance and Atomic Structure	Kinetics, equilibria, optical isomerism and carbonyl groups.
Autumn 2	Bonding, Periodicity, an Introduction to Organic Chemistry- Alkanes and Haloalkanes.	Acids and bases, thermodynamics, aromatics, amines and polymers
Spring 1	Kinetics, Energetics, Alkenes and alcohols	Periodicity, amino acids, proteins and DNA.

Spring 2	Equilibria and Redox reactions	Redox equilibria, transition metals, synthesis routes and structure determination.
Summer 1	Group 7 and Analytical techniques	Preparation for examinations.
Summer 2	Structure determination	Examinations

How is the Course Assessed?

The course is 100% exam based and examined by 3 terminal exam papers:

All 3 papers are 2hrs long.

Paper 1 is 105 marks and is worth 35%. It examines relevant Physical chemistry topics, Inorganic chemistry and relevant practical skills. It is a mixture of long and short answer questions.

Paper 2 is 105 marks and is worth 35%. It examines relevant Physical chemistry topics, Organic chemistry and relevant practical skills. It is a mixture of long and short answer questions.

Paper 3 is 90 marks and is worth 30%. This paper is synoptic and can examine any part of the course. It comprises 40 marks of questions on practical techniques and data analysis 20 marks of questions testing across the specification 30 marks of multiple choice questions.

20% of the marks come from level 2 maths content. 15% of the marks are derived from questions assessing knowledge, skills and understanding relating to practical work.

Across each exam the following skills are assessed:

AO1: Demonstrate knowledge and understanding of scientific ideas, processes, techniques and procedures.

AO2: Apply knowledge and understanding of scientific ideas, processes, techniques and procedures: In a theoretical context In a practical context When handling qualitative and quantitative data.

AO3: Analyse, interpret and evaluate scientific information, ideas and evidence, including in relation to issues, to: Make judgements and reach conclusions Develop and refine practical design and procedures.

Throughout the course students are assessed at regular intervals using praising stars tests which test any content which has been covered up to that point of the course.

What is our Recommended Subject Reading list to Support your Study?

Magazine/Journals

The New Scientist

The Mole

Books

The Disappearing Spoon and Other Extraordinary True Tales from the Periodic Table - Sam Kean

Periodic Tales - Hugh Aldersey-Williams

Why Chemical Reactions Happen - James Keeler

The Pleasure of Finding Things Out - Richard Feynman

Uncle Tungsten - Oliver Sachs

The Shocking History of Phosphorus: A Biography of the Devil's Element - John Emsley

Websites

Periodic Table of Videos by Martyn Poliakoff www.youtube.com

Royal Society of Chemistry www.rsc.org.uk

Institution of Chemical Engineers www.icheme.org

www.chemguide.co.uk