POST 16 SUBJECT OVERVIEW

Post 16 Subject Overview

Name of Subject
AQA L3 Advanced GCE in Chemistry

Which Examination Specification is Studied for this Course?
AQA L3 Advanced

Why should I study this course?
A-level Chemistry attempts to answer the big question 'what is the world made of' and it's the search for this answer that makes this subject so fascinating. From investigating how one substance can be changed drastically into another, to researching a new wonder drug to save millions of lives, the opportunities that chemistry provides are endless.

Who is suitable to study this course?
Chemistry builds on your skills from GCSE, we will look deeper into topics that you have studied before and explore new areas of Chemistry. It is therefore essential that you have a good pass at GCSE in either Separate Sciences or Combined Science.

Chemistry is a facilitating subject and works well alongside a number of other subjects such as Biology, Physics, Maths, Psychology and Geography.

Students who study Chemistry progress onto a number of different degree courses such as Medicine, Chemistry, Biology, Biochemistry, Mathematics, Pharmacology, Environmental Sciences, Engineering, and Law.

What GCSE Qualifications Support the Study of this Course?
A level Chemistry tests scientific ability, mathematical skills, research and communication. Overall, at least 20% of the marks in assessments for chemistry will require the use of mathematical skills. These skills will be applied in the context of chemistry and will be at least the standard of higher tier GCSE Mathematics. This means that students must have studied the higher paper in GCSE Mathematics to study this course.

What are the Qualification Requirements for this Course?
We require GCSE in Chemistry or Combined Science at grade 6 and GCSE maths at grade 6.

How is the Course Delivered?
Chemistry is delivered over 5 hours per week of classroom learning, plus around a further 5 hours of independent study. Students will have two Chemistry teachers who will each deliver separate elements of the course.

There are 12 required practicals which contribute to a practical endorsement and will be examined but teachers will also use practical investigations to help deliver the course content.

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.

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?

We recommend that students have a broad range of reading such as:

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