

## POST 16 SUBJECT OVERVIEW

**Name of Subject** - Chemistry

**Which Examination Specification is Studied for this Course?** AQA Chemistry 7404

**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.

Studying A level Chemistry will be challenging but full of fascinating stories and ideas that have made advances in science possible.

You will develop essential knowledge and understanding of the Periodic table, Chemical concepts and trends and patterns in data. This will develop understanding of advanced modern analytical techniques and answer future problems.

**Who is suitable to study this course?** -

A level Chemistry is a choice for students that love science and want to progress into a career in the sciences. The broad range of skills both practically and scientifically can lead to future careers in Medicine, Chemical engineering, Pharmacologist, toxicology, Forensic Scientist, food technologies, material scientist and many more.

Chemistry can support and be supported by studying other science subjects A level Biology and A level Physics. A Level Maths can also support studying Chemistry.

**What GCSE Qualifications Support the Study of this Course?**

Studying either GCSE Chemistry or GCSE Combined Science will give you a grounding in Chemistry to start A level.

**What are the Qualification Requirements for this Course?**

GCSE Chemistry and either Biology or Physics (Separate Sciences): Grade 6

Or

GCSE Combined Sciences 6/6

### How is the Course Delivered? -

Chemistry is delivered as 5 hours per week taught lessons which are split into 2 sessions (a 3 hour lesson and a 2 hour lesson) and are expected to complete a further 5 hours of independent study outside of lesson time.

There is a wide variety of ways in which the lessons will be delivered from practical work for the practical endorsement, exam practice and Google classroom.

Subject Overview		
Half Term	Year 12	Year 13
Autumn 1	Atomic Structure, Amount of Substance Intro to Organic Chem, Alkanes and Halogen alkanes	Thermodynamics, Rate Equations, Isomerism and Carbonyl Compounds, Aromatics and Amines
Autumn 2	Bonding, Energetics, Alkenes and Alcohols, Organic Analysis	Equilibria, Electrode Potentials, Polymers, Amino Acids, Proteins and DNA
Spring 1	Kinetics, Equilibria and Redox	Acids Bases and pH, Transition Metals
Spring 2	Periodicity, Group 2 and Group 7	Period 3 Elements, Organic Synthesis and Analysis
Summer 1	Revision and Consolidation	Revision and Exam Preparation
Summer 2	Revision and Consolidation	Exams

## How is the Course Assessed?

The course is 100% exam based and examined by 3 terminal exam papers:  
All 3 papers are 2 hours 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](http://www.youtube.com)

Royal Society of Chemistry [www.rsc.org.uk](http://www.rsc.org.uk)

Institution of Chemical Engineers [www.icheme.org](http://www.icheme.org)

[www.chemguide.co.uk](http://www.chemguide.co.uk)

