

## POST 16 SUBJECT OVERVIEW

### Chemistry

#### AQA

#### Why should I study this course?

Chemistry helps us to understand the world in which we live and underpins a wide range of science-based degree courses and careers. Success with A level chemistry will prepare you for a future in chemistry, pharmacy, pharmacology, chemical engineering, biochemistry, biomedical sciences, medicine and dentistry.

This course we deliver is designed to be stimulating, enjoyable and challenging! We want you to develop a passion for the subject and understand its practical relevance, as well as learn how to be objective, analytical, methodical and in turn solve problems.

We offer weekly bespoke after school enrichment to enhance and support your learning and incorporate a trip to Sheffield University where you will synthesise aspirin in order to experience a university laboratory.

#### Who is suitable to study this course?

A-level Chemistry is first and foremost a choice for students who love science and want to progress towards studying a science related degree course or a course in medicine, health (e.g dentistry) and veterinary science. The broad range of topics and practical skills that will be developed lend themselves to future careers like: Doctor, Chemical Engineer, Pharmacologist, Toxicologist, Forensic Scientist, Food Technologist and many others.

Chemistry pairs well with aspects of both the A-level Physics and Biology course and works very well along A-level Maths.

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

Triple Science is preferable. Students who have taken Combined Science may have to work a little bit harder to catch up on content not covered at GCSE.

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

6s in Triple Science or 7/7 on Combined Science plus 6 in English Language and 6 in Maths

### How is the Course Delivered?

There are usually 2 members of specialist Chemistry staff who deliver the A-Level course who will have a chemistry related degree. You will have 5 hours per week of taught lessons and are expected to complete another 5 hours of independent study outside of lesson time. You will have access to lesson resources and exam questions via our Google Classroom to use to support your independent study.

Subject Overview		
Half Term	Year 12	Year 13
Autumn 1	Atomic Structure, Amount of Substance Intro to Organic Chemistry, Alkanes and Halogenoalkanes	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 assessed at the end of Year 13 with three 2 hour exams. Paper 1 covers all of the Inorganic components along with some of the Physical components and is worth 35% of the final grade. Paper 2 covers all of the Organic component along with some of the Physical component and is worth 35% of the final grade. Paper 3 covers the entire course and contains a multiple choice section. Paper 3 is worth 30% of the final grade.

20% of the overall assessment will be based on mathematical skills and at least 15% will assess practical knowledge, skills and application.

In addition to examinations there is also a Practical Skills Endorsement certificate which is graded as a pass or fail based on your ability to carry out 12 required practicals independently during the 2 years. This is awarded separately to the A Level although you will still be assessed on your knowledge of the practicals during the exams.

There will be a Praising Stars assessment each Praising Stars cycle as well as mock exams in January and June.

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

### **Text Book**

**A Level Year 1** – CGP A Level Chemistry AQA Year 1 and AS

**A Level Year 2** – CGP A Level Chemistry AQA Year 2

Longman Calculations in AS/A Level Chemistry by Jim Clark

Illuminate Publishing Maths for A Level Chemistry by Stephen Doyle

### **Additional text books**

Collins AQA A Level Chemistry Year 1 and AS by Lyn Nicholls and Ken Gadd

Collins AQA A Level Chemistry Year 2 and AS by Andrew2 Clark, Lynne Bayley and Paolo Coppo

Oxford AQA A Level Chemistry by Ted Lister and Janet Renshaw

### **Recommended reading**

CGP. 2015. Head Start to A-Level Chemistry

## **Recommended websites**

<http://www.aqa.org.uk/subjects/science/as-and-a-level/chemistry-7404-7405>

<http://www.docbrown.info/>

<http://www.creative-chemistry.org.uk/> <http://www.knockhardy.org.uk/sci.htm>

[http://www.chemistry-react.org/go/default/Default\\_100001.html](http://www.chemistry-react.org/go/default/Default_100001.html)

[http://www.s-cool.co.uk/topic\\_index.asp?subject\\_id=7](http://www.s-cool.co.uk/topic_index.asp?subject_id=7)

<http://antoine.frostburg.edu/chem/senese/101/index.shtml>

<http://www.wpbschoolhouse.btinternet.co.uk/> <http://www.teachmetuition.co.uk/Chemistry/> <http://alevelchemistry.co.uk/>

[http://www.revision-notes.co.uk/A\\_Level/Chemistry/index.html](http://www.revision-notes.co.uk/A_Level/Chemistry/index.html)

<http://www.chemguide.co.uk/> [http://www.sheffcol.ac.uk/links/Science/Chemistry/Teaching\\_Aids/](http://www.sheffcol.ac.uk/links/Science/Chemistry/Teaching_Aids/)

<http://www.carlton.paschools.pa.sk.ca/chemical/>

<http://chem.lapeer.org/Chem1Docs/> [http://serendip.brynmawr.edu/sci\\_edu/chemsites.html](http://serendip.brynmawr.edu/sci_edu/chemsites.html)

