

REVISED GCE AS & A LEVEL
Student Guide
Chemistry

For first teaching from September 2008

For first award of AS Level in Summer 2009

For first award of A Level in Summer 2010

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Student Guide: Chemistry

GCE Chemistry is the study of elements and the compounds they form. It involves the study of Physical, Organic, Inorganic Chemistry as well as periodic trends, analytical, transition metals and electrochemistry. You will look at how society makes decisions about scientific issues and how the sciences contribute to the success of the economy and society.

The AS (Advanced Subsidiary)/A2 structure of this GCE means you can study for the AS Level award, completing units AS 1, AS 2 and AS 3 and then decide if you wish to continue to A2 Level where you will complete the three additional units A2 1, A2 2 and A2 3. This will lead to an award for the **full Advanced GCE**.

Q. Why study GCE Chemistry?

This course is suitable if you wish to further your education in chemistry. You can take this course as a 1 year AS level course which would be beneficial for use with many subjects you would like to study in the future and it would also be beneficial in various careers. If you go on to study the full GCE (ie both the AS and A2 course) then it provides a good foundation for further study at university or for students going into the world of work.

Q. What do I need to be able to take this course?

It will be beneficial if you have obtained a good standard at GCSE Science: Double Award, GCSE Science: Chemistry or other equivalent courses because the AS builds on, but does not depend upon, the knowledge, understanding and skills developed within these subjects. The Advanced GCE specification incorporates the AS. The A2 section of the Advanced GCE builds upon the foundations of knowledge, understanding and skills developed within the AS course.



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Q. What will I study?

AS 1: Basic Concepts in Physical and Inorganic Chemistry	In this module you will learn about atomic structure and bonding as well as the shapes adopted by molecules and ions and the intermolecular forces existing between them. There is a general introduction to the Periodic Table with an in-depth study of Group VII. Redox reactions are introduced while analytical chemistry consists of acid-base titrations. Basic calculations and equations are an integral part of this module.
AS 2: Further Physical and Inorganic Chemistry and Introduction to Organic Chemistry	Organic chemistry forms a major part of this unit with work on the chemistry of alkanes, alkenes, haloalkanes and alcohols. There is an introduction to equilibrium and kinetics while thermochemistry is covered in some depth. The analytical chemistry aspects are covered by IR spectroscopy and qualitative analysis. There is also further work on basic calculations.
AS 3: Internal Assessment	This unit is timetabled and you will be assessed under controlled conditions. The papers will be marked by your centre to a CCEA-supplied mark scheme. Section A consists of two practical tasks each worth 25 and 29 marks respectively. Section B has a planning exercise worth 20 marks and a number of other questions testing knowledge of practical techniques, observations and calculations worth 16 marks.
A2 1: Periodic Trends and Further Organic, Physical and Inorganic Chemistry	In this module there is further development of equilibrium and kinetics you will also learn about Lattice Enthalpy and Entropy. The study of organic chemistry is continued with units on isomerism, aldehydes and ketones, carboxylic acids and esters, fats and oils. Periodic Trends and environmental chemistry complete this module.
A2 2: Analytical, Transition Metals, Electrochemistry and Further Organic Chemistry	In this module you will learn about analytical chemistry through units on mass spectrometry, NMR spectroscopy, volumetric analysis, colorimetry and chromatography. The inorganic chemistry studied is based mainly on Transition metals with specific reference to Cr and V. Organic nitrogen compounds form the backbone of the work on organic chemistry and there is a final unit on polymer chemistry.
A2 3: Internal Assessment	In this module you will complete a practical examination lasting 2½ hours, consisting of a planning exercise which is worth 20 marks and practical exercises which are worth 50 marks. Your work will be internally assessed by your centre and moderated by CCEA.

Q. How is GCE Chemistry assessed?

Unit	Type of Assessment
AS 1: Basic Concepts in Physical and Inorganic Chemistry Worth 35% of AS 17.5% of A Level	1 hour 30 minute written paper containing multiple choice and structured questions. <i>Available in January and Summer series of examinations.</i>
AS 2: Further Physical and Inorganic Chemistry and Introduction to Organic Chemistry Worth 35% of AS 17.5% of A Level	1 hour 30 minute written paper containing multiple choice and structured questions. <i>Available in January and Summer series of examinations</i>
AS 3: Internal Assessment Worth 30% of AS 15% of A Level	2 hour 30 minute Internal assessment consisting of two practical tasks and a planning exercise. <i>Available in Summer series of examinations.</i>
A2 1: Periodic Trends and Further Organic, Physical and Inorganic Chemistry Worth 40% of A2 20% of A Level	2 hour written paper containing multiple choice and structured questions. <i>Available in January and Summer series of examinations.</i>
A2 2: Analytical, Transition Metals, Electrochemistry and Further Organic Chemistry Worth 40% of A2 20% of A Level	2 hour written paper containing multiple choice and structured questions. <i>Available in Summer series of examinations.</i>
A2 3: Internal Assessment Worth 20% of A2 10% of A Level	2 hour 30 minute Internal assessment consisting of a planning exercise and practical exercises. <i>Available in Summer series of examinations.</i>

Q. What can I do with a qualification in Chemistry?

A chemistry course is your ticket to understanding the world around you! It can also lead to an exciting career. From agriculture to zoology, from production to sales, in a forest, on a highway, or in a hospital, chemistry is everywhere and touches our lives in countless ways!

Chemistry can be interesting and fun, too. Understanding chemicals—whether those in your own home or at a chemical plant—will be important to you throughout your life. You will need to make decisions about what cars to buy, medications to take, and legislation that affects your environment. Having a good understanding of chemistry will help you make the right decisions.

Finally let's not forget about your employment prospects. Chemists are considered to have the skills that make them highly employable and can therefore almost always find a job, even in tough economic times.

How can I find out more?

There are a number of ways that you can find out more about studying Chemistry.

These include:

- Teachers at your school or college
- Students who are already studying the subject
- www.ccea.org.uk/chemistry
- www.ase.org.uk
- www.rsc.org
- Careers advisor
- UCAS www.ucas.com or CAO www.cao.ie for details on entry requirements for university courses

To view the full specification and the full range of support material available for GCE Chemistry, please visit the Chemistry microsite www.ccea.org.uk/chemistry

