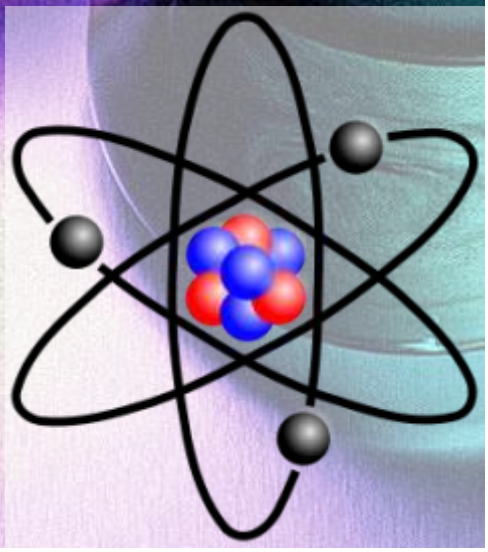
Chemistry Subject Booklet



Course Outline

Chemistry is a fascinating and vital subject for understanding the world around us. You will develop transferable skills in analysis, problem solving, evaluation and logic. These skills are prized by both employers and universities, and this is why Chemistry is a very highly regarded subject whatever your future direction.

OCR Chemistry is a modular course consisting of 2 exams and coursework in AS and 2 exams and coursework in A2.

The course is designed to increase your understanding of key areas of chemistry, develop your interest and enthusiasm for the subject, and appreciate the role of chemists in solving global problems.

Teachers

Mrs Hockin - Head of Chemistry

Mr Crossley

Dr Punn

Courses / Careers after the A-level

Chemistry is a subject that can lead onto may university courses and career options. It is strongly recommended or essential for courses in medicine, veterinary science, dentistry, pharmacy, pharmacology and some biology courses. An A level in Chemistry is a real advantage for any application, and chemistry graduates are amongst the highest earning of all university graduates. They can choose to work in industry or academic research, and many go on to work in other areas such as finance, management, law, the scientific civil service, and teaching.

Exams and Assessment

UNIT	EXAM CODE	DATE EXAMINED	TITLE / CONTENTS
1	F321	Jan 2010	Atoms, Bonds and Groups
2	F322	June 2010	Chains, Energy and Resources
3	F323	Feb 2010	Practical Skills in Chemistry
4	F324	Jan 2011	Rings, Polymers and Analysis
5	F325	June 2011	Equilibria, Energetics and Elements.
6	F326	Feb 2011	Practical Skills in Chemistry 2

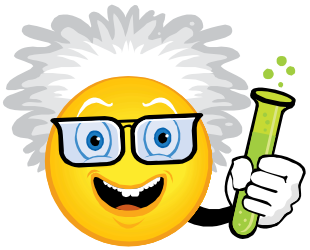
Units 3 and 6 are the coursework assessments.

Remember for each exam you will need to take a pen, pencil, ruler and a scientific calculator.

Exam results will be available in the 2nd week of March for the Jan exam and the 2nd week of August for the June exams.

Re-sits

We will have consultations with each student following results and will advise you of where your grade stands. If you choose to re-take an exam after this advise it will require YOU to complete a re-sit form Mrs O'Malley in the exams office . There will be charge for each exam and you will need the exam codes given in the table above.



Coursework

(20%)

AS

3 tasks;

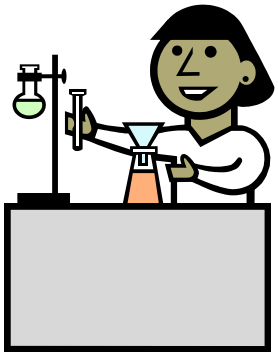
* Quantitative 10 marks
* Qualitative 15 marks
* Evaluation 15 marks

You will carry these out during a dedicated practical day. You will be given an opportunity to complete another task if you need to improve your mark.

Coursework	Date of assessment	Complete √ x	Mark
Quantitative			
Qualitative			
Evaluation			

The Quantitative (numbers) and Qualitative (observations) tasks require you to perform an individual practical in exam conditions. You will gain marks for the results, how they are displayed and your answers to the questions. This will require preparation, both in lessons and revision at home.

The Evaluation task will be based on a familiar practical and will require you to use your chemistry knowledge and understanding to explain the results and analyse the effectiveness and reliability of the method used.



A2

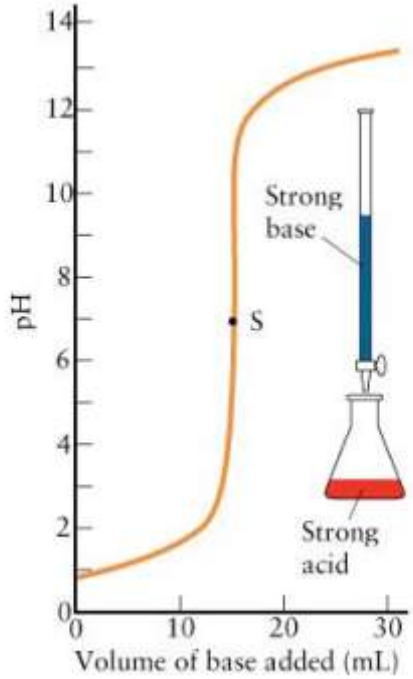
3 tasks;

* Quantitative 10 marks
* Qualitative 15 marks
* Evaluation 15 marks

Again, you will be given a whole day to complete these tasks and opportunity to improve if required.

Coursework	Date of assessment	Complete √ x	Mark
Quantitative			
Qualitative			
Evaluation			

These tasks are similar in style to those used at AS, but they will test your knowledge of the A2 specification and techniques.



Independent Study

As part of your commitment to this subject you need to be pro-active and complete 5 hours of Independent study. This can include;

* Set homework
* Completing / re-organising lesson notes
* Reading through your course textbook, either recapping the last lesson or preparing for the next lesson.
* Using recommended websites, exam papers to complete practice questions and test your understanding.
* Taking a topic you have found harder to understand and working though the recommended resources to improve.

The object of education is to prepare the young to educate themselves throughout their lives. ~Robert Maynard Hutchins

Resources to use

Websites

www.docbrown.info and www.chemguide.co.uk — helpful and easy to use sites which explain all the core content you will learn.

www.ocr.org.uk - information on specifications and past papers

OCR Chemistry textbook - set out in the modules providing excellent diagrams, glossary, and practice exam questions.

We have a library of alternative chemistry textbooks which are ideal for extra help, revision and reading around the subject, just ask your teacher to visit the chemistry library!

Subject Glossary

Coursework Terms

Accuracy is a measure of the closeness of agreement between an individual test result and the accepted reference value. If a test result is accurate, it is in close agreement with the accepted reference value.

Error (of measurement) is the difference between an individual measurement and the true value (or accepted reference value) of the quantity being measured.

Precision is the closeness of agreement between independent measurements obtained under the same conditions. It depends only on the distribution of random errors (*i.e.* the spread of measurements) and does not relate to the true value.

Uncertainty is an estimate attached to a measurement which characterises the range of values within which the true value is asserted to lie. This is normally expressed as a range of values such as 44.0 ± 0.4.

Reliability is the opposite of uncertainty, *i.e.* if the uncertainty is great; the measurement is not very reliable. Reliable results are in close agreement with each other

Key words in organic chemistry

Electrophile — an electron pair acceptor

Nucleophile — an electron pair donor

Addition Reaction — a reaction in which two reacting molecules combine to form one new molecule

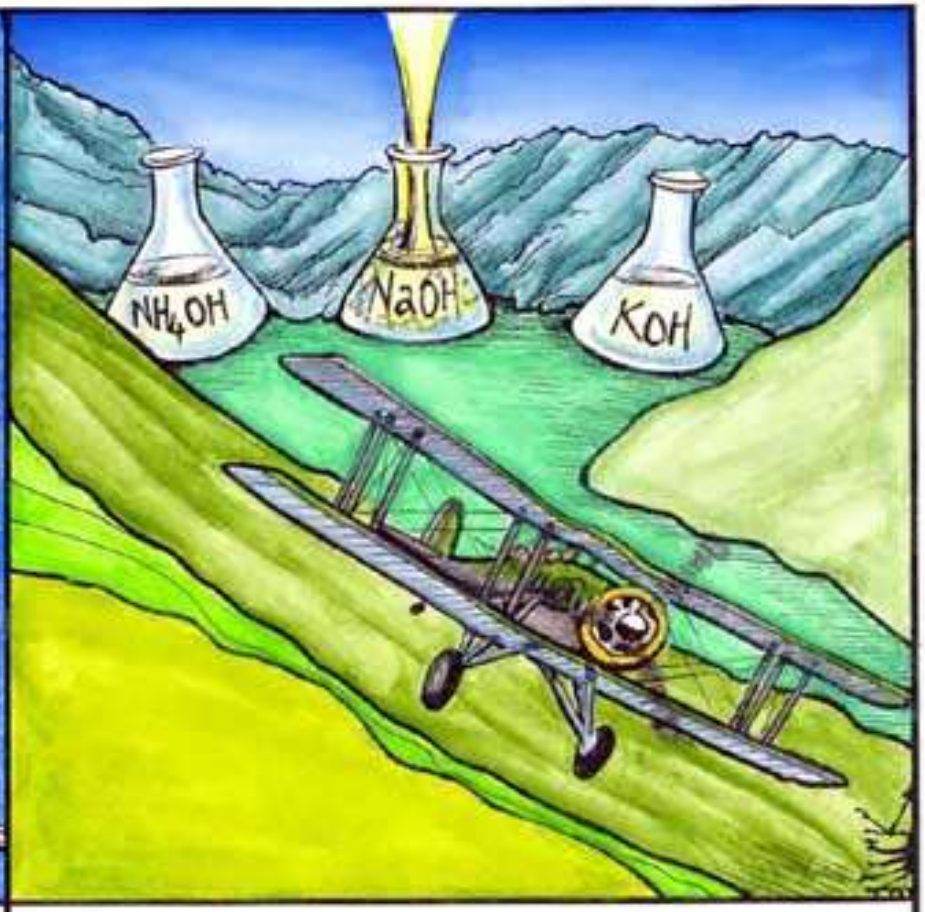
Elimination Reaction — a reaction in which a small molecule is removed, such as H_2O

Substitution Reaction — a reaction in which one functional group is replaced by a different functional group.

LAB INTIO

by Nick D Kim

Despite the heavy flak, McAlister's aim was true, and his carefully measured aliquot of hydrochloric acid found its mark deep in the enemy's reservoir of sodium hydroxide.



McAlister grinned wryly: finally, one of the enemy's strongest bases had been completely neutralized.