SUBJECT: **CHEMISTRY**
Title of GCE: **A level Chemistry**
Exam Board: **AQA**
Syllabus Number: **7405**

Course Overview:

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.
Chemistry aims to develop students who are motivated and curious to delve into the material world and how it works. The content is focussed on relating everyday concepts such as the development of new technologies to the scientific theory behind their evolution. Students will develop an understanding of key areas such as drug and medicine production and environmental impact reduction.

The course begins with atomic structure and amount of substance which form the foundations for the rest of the course. Physical chemistry topics will look in detail at how reactions proceed and the factors that influence their rate, yield and energy transfers. Students will also study the different types of bonding and use bonding theory to explain the physical and chemical properties of substances in a topic which will build on students' prior knowledge from GCSE.

Inorganic chemistry involves looking at trends and patterns in the Periodic table and linking these patterns to atomic structure, in particular their electron arrangements. The physical and chemical properties of the elements in period 2 and group 7 will be looked at in detail.

The organic chemistry units will look at how carbon combines with other elements to create families of compounds with specific functional groups and properties. Students will also study how these compounds are produced and how they can be used to create more complex carbon based compounds. Students will be required to undertake investigations analysing compounds and the synthesis of different molecules to further their understanding of the compounds. The topic will also develop further the students' knowledge of alkanes and alkenes from GCSE.

The depth and breadth of Chemistry enables you to develop your capacity for problem solving, applying mathematical skills to practical situations, following the scientific model and showing that you can understand concepts at a complex level.

Chemistry, like all sciences, is a practical subject. Throughout the course you will carry out practical activities including measuring energy changes in chemical reactions, tests for identifying different types of compound, different methods for measuring rates of reaction, studying electrochemical cells, preparation of organic solids and liquids and using an advanced form of chromatography for achieving more accurate results.

'If you are up for a challenge, chemistry will be a good choice. It gives a view into the building of everything from the simple to the advanced, and sometimes the peculiar!'
A level Chemistry student.

A Level Assessment:

Paper 1 (2 hours, 35% of A level)
Paper 2 (2 hours, 35% of A level)
Paper 3 (2 hours, 30% of A level)

Papers are assessed on the following topics:
Physical Chemistry – atoms, structure and bonding, energetics and acid/bases
Inorganic Chemistry – groups and elements on the periodic table
Organic Chemistry – alkanes and alkenes, functional groups, analysis and synthesis

Coursework/Controlled Assessment:

There is no formal controlled assessment. However, the students have to demonstrate sound practical skills through a series of assessed practical activities to pass the course. At the end of the course successful students will receive an endorsement of practical skills together with their A-level grade.

Career Opportunities:

Studying an A-level Chemistry related degree at university gives you all sorts of exciting career options, including:
• Analytical chemist
• Chemical engineer
• Clinical biochemist
• Pharmacologist
• Doctor
• Research scientist (physical sciences)
• Toxicologist
• Chartered certified accountant
• Environmental consultant
• Higher education lecturer
• Patent attorney
• Science writer
• Secondary school teacher.
You may decide to enter the world of work after A level studies, in which case Chemistry could lead on to Science technician roles in the NHS, or laboratories.

Possible degree options
The top five degree courses taken by students who have an A-level in Chemistry are:
Chemistry, Biology, Pre-clinical medicine, Mathematics and Pharmacology.
Chemistry is also considered to be a facilitating subject; so is regarded highly when applying for any further education course.

Students who study this subject often complement it with:

Biology, Geography, Maths, Physics

Useful revision websites:
http://www.s-cool.co.uk/a-level/chemistry
http://www.a-levelchemistry.co.uk/

For more information or advice contact:

Miss Bryant