

CHEMISTRY A LEVEL

Subject Leader: **Ms Williams**

Syllabus: **AQA**

Course Specification: **7404 / 7405**

Course Requirements

5 GCSEs graded 9 – 5 including English. A minimum of grade 6 in Maths.

Grade 66 in Combined Science or Grade 6 in Chemistry required.

Course Information

Year 1 Study

In the first year of the A level students will study topics which build and extend GCSE knowledge from the following areas: Physical chemistry examines a range of topics including atomic structure, the amount of substance, bonding, energetics, kinetics, equilibria, and oxidation and reduction reactions.

Inorganic chemistry looks at periodicity, the group 2 and group 7 elements.

Organic chemistry covers alkanes, halogenoalkanes, alkenes, alcohols and organic analysis.

Year 2 Study

In the second year of the A level students continue their study into chemistry:

Physical chemistry looks at thermodynamics, rate equations, the equilibrium constant K_p for homogeneous systems, electrode potentials and electrochemical cells and finally, acids and bases. Inorganic chemistry examines further the periodic table specifically the properties of period 3 elements and their oxides, transition metals and reactions of ions in aqueous solution. Organic chemistry develops students' knowledge further through topics such as optical isomerism, aldehydes and ketones, carboxylic acids and derivatives, aromatic chemistry, amines, polymers, amino acids, proteins and DNA, organic synthesis, nuclear magnetic resonance spectroscopy and chromatography.

Assessment

Throughout the course, students will be assessed at the end of each topic to monitor progress, as well as through assessment of significant pieces of work. These assessments do not count towards the final grade. There will also be internal assessments at the start of the course and at the end of year 12. At the end of year 13, students sit 3 papers. The first is called Periodic Table, Elements and Physical Chemistry which assesses modules 1, 2, 3 and 5 and the second is called Synthesis and Analytical Techniques

which assesses modules 1, 2, 4 and 6. Each of these papers is worth 35% of the final examination grade. The third paper, worth 30% of the total A level will ask questions from all content. There is also a Practical Endorsement in Chemistry which will be reported separately to the A level grade, where students keep a lab book of practical experiences over the 2 years of the course. In total, there are 12 practical areas that students need to have covered.

Teaching and Learning Styles

The chemistry course will be highly practical in nature, it will involve group and individual work and practice of exam questions for consolidation of concepts. The mathematical requirements of the course are challenging with at least 20% of assessment marks being for mathematical skills

Independent Study

Independent work is encouraged and promoted. Students must read up on content before the lesson and then use time after the lesson to complete work, for example, revision materials to further their understanding of the topic. Students would be expected to spend an average of 3-4 hours per week on independent study. Students will have access to an online textbook and resources through our Sixth Form learning resource, Kerboodle.

Future Pathways

Chemistry, like all the sciences, is a facilitating subject, one that many universities require students to have to get onto many degree courses. The A Level Chemistry course will prepare learners for progression to undergraduate courses in chemistry, biochemistry, medicine, dentistry, engineering, pharmacy or one of the other sciences or related subjects. For learners wishing to follow an apprenticeship route or those seeking direct entry into chemical science careers, this A level provides a strong background and progression pathway.

