Chemistry A Level

Subject Leader: Mr Adams

Syllabus: OCR Chemistry A

Course Specification: H432

Course Requirements
5 GCSEs graded 9 – 5 including English and Maths at grade 6. Recommend a 7 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 extends GCSE knowledge from the following 4 areas:
Module 1 – Development of Practical Skills in chemistry looks at the practical skills throughout year 12 and year 13.
Module 2 – Foundations of Chemistry begins with atoms, compounds molecules and equations before going onto looking at how we can calculate the amount of a substance, acid-base and redox reactions finally ending with electrons, bonding, and structure.
Module 3 – Periodic table and Energy covers the periodic table and periodicity, group 2 and the halogens, qualitative analysis, enthalpy changes and reaction rates and equilibrium from a qualitative perspective.
Module 4 – Core Organic Chemistry looks at hydrocarbons, alcohols and haloalkanes, organic synthesis and analytical techniques.

Year 2 Study
In the second year of the A level students continue their study into chemistry – module 1 continues to develop their practical skills, whilst they study two more units:
Module 5 – Physical Chemistry and Transition Elements looks at a quantitative approach to reaction rates and equilibrium, pH and buffers, enthalpy, entropy and free energy, redox and electrode potentials, and transition elements.
Module 6 – Organic Chemistry and Analysis examines further organic chemistry to cover aromatic compounds, carbonyl, carboxylic acids and ester, nitrogen compounds, polymers, organic synthesis and chromatography and spectroscopy.

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 37% of the final examination grade. The third paper, Unified Chemistry, is worth 26% of the total A level and 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 6 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.