CHEMISTRY

Subject Leader: Mr A Pearce
Examination Board: WJEC
Students should have attained a minimum of a B grade in either GCSE Chemistry (Separate Science) although it is highly recommended that they have attained an A grade, or BB in Double Award Science with an A grade in the Chemistry component.

Course Outline

Year 12 (AS Level)

Unit 1 – The Language of Chemistry, Structure of Matter and Simple Reactions - In this unit we will study the structure of atoms, chemical equilibria and acid-base reactions and practise many types of chemical calculations. We will also study bonding and the forces that occur between molecules and see how these influence the shapes, structures and properties of materials. We will begin to look at trends that occur in the periodic table

Unit 2 – Energy, Rate and Chemistry of Carbon Compounds - In this unit we will study energetics and kinetics (reaction rates) and apply these principles to the problems that are encountered in the production of chemicals and energy. We will also begin to study some types of organic compounds and their reactions.

Year 13 (A2 Level)

Unit 3 - Physical and Inorganic Chemistry – This unit covers a wide range of physical concepts including pH, buffers and indicators; Redox; energy changes and entropy. The chemistry of transition metals and the elements in the p block of the periodic table are also studied.

Unit 4 - Organic Chemistry and Analysis – In this unit a wide variety of organic chemicals and reactions are studied, along with a range of techniques that can be used to identify such compounds.

Unit 5 - Practical Examination – This unit gives learners the opportunity to demonstrate their skills, knowledge and understanding in relation to practical techniques and their ability to analyse and evaluate experimental data. The practical examination comprises of two tasks to be carried out under controlled conditions: i) Lab-based Experimental task ii) Practical Methods and Analysis Task (examination paper).

The students will also need to complete compulsory practical tasks throughout the two year course which will need to be recorded in a 'lab book'.

Entry Requirements

It is essential that students achieve a minimum grade B or above in Chemistry GCSE (Higher) or BB in Double Award Science with an A grade in the Chemistry component. This ensures that a student possesses the required background knowledge needed at A level. This is a very challenging course and requires students to have a committed approach to study both in and out of lessons. A large amount of calculation work is involved so students will need to have secured at least a B grade in GCSE Maths.

What will I study?

	AS level – Year 12	Weighting	
		% AS	% A2
1	The Language of Chemistry, Structure of Matter and Simple	50	20
2	Energy, Rate and Chemistry of Carbon Compounds	50	20

	A2 level – Year 13	Weighting
		% A2
3	Physical and Inorganic Chemistry	25
4	Organic Chemistry and Analysis	25
5	Practical Examination	10

How will I be assessed?

Units 1 and 2 – test time 1hr 30 mins. **Units 3 and 4** – test time 1hr 45mins. **Unit 5 -** 3hr experimental task; 1 hr exam All assessment will be externally set and assessed by the Board.

Career Opportunities & Progression

Chemistry is often an essential qualification for a large number of career pathways in areas such as Applied Chemistry, Chemical Engineering, Medicine, Dentistry, Pharmacy, Biochemistry, Biotechnology and Environmental Science. If you want any science-based career, then Chemistry keeps your options open.