

**Curricular Area:** Science

**Course Title:** Chemistry Advanced Higher

### **Course Description**

The course is suitable for students who wish to continue to study Chemistry beyond Higher level and is an ideal introduction to University level study. A high degree of commitment, self-motivation and determination are essential. Students will be expected to work independently and consequently this course is a stepping stone to the type of studying students will experience at University.

The course consists of 3 units of work.

**Unit 1:** Inorganic & Physical Chemistry: Electromagnetic radiation & atomic spectra, atomic orbitals, electronic configurations & the Periodic Table, shapes of molecules & polyatomic ions, transition metals, chemical equilibrium, reaction feasibility, kinetics

**Unit 2:** Organic Chemistry & Instrumental Analysis: molecular orbitals, molecular structure, synthesis of organic compounds, experimental determination of structure, pharmaceutical chemistry

**Unit 3:** Researching Chemistry: gravimetric analysis, volumetric analysis, practical skills & techniques, stoichiometric calculations. Chemistry project.

### **Entry requirements**

Higher Chemistry at Grade B or above

### **Assessment**

At Advanced Higher level students are assessed on their ability to make accurate statements, related to key areas of content and successfully perform solving problem skills, (in Key Area assessments) as well as their ability to plan, carry out and write up an experiment/practical investigation.

There is a Chemistry investigation, which allows students to carry out an in-depth study of a chemistry topic. This is an individual open-ended task, which may involve a significant part of the work being carried out without close supervision. The learner will extend and apply the skills of independent/autonomous working. This includes making independent and rational decisions based on evidence and interpretation of scientific information and the analysis and evaluation of their results. This will further develop and enhance their scientific literacy. The investigation will have 30 marks. There is also an externally assessed final exam.

### **Home Study Expectations**

Students are issued with home study every week. Home Study tasks will vary and could include research, consolidation of learning, practicing data handling skills or extended pieces of writing. Students will be expected to enhance and extend their knowledge in serious private study, especially when working on their investigation.



### **Wider Achievement Opportunities**

Students have many opportunities to explore and develop their investigative and practical skills in Chemistry. The ability to write extended pieces of text to express scientific ideas and knowledge are also developed.

### **Possible career path**

The study of Chemistry at this level provides a good grounding for many careers in the Engineering sector, discovering new medicines, environmental protection, forensic science, researcher, education, Science advisors for politics and policy makers, consultants on economic impact of chemical issues, fragrance chemist, Science writing and communication, art: illustrations in Chemistry textbooks, magazines and many more.

It is also a good stepping stone to degree level study in Dentistry, Medicine, Pharmaceuticals and Biotechnology to name just a few!

For more information see <http://www.rsc.org/learn-chemistry/collections/faces-of-chemistry/careers-with-chemistry>