Leaving Certificate Chemistry

About the subject:

- Chemistry is a branch of Science. It is the study of matter, its properties, how and why substances combine or separate to form other substances, and how substances interact with energy.
- Chemistry is one of the physical sciences that help us to describe and explain our world.

Main Topics Covered:

- Organic Chemistry: the branch of chemistry that deals with carbon compounds.
- Inorganic chemistry: the branch of chemistry that deals with inorganic compounds.
- Physical chemistry: the branch of chemistry dealing with the relations between the physical properties of substances and their chemical composition.
- Analytical chemistry: studies and uses instruments and methods used to separate, identify, and quantify matter.
- Biochemistry: is the study of chemical processes within and relating to living organisms.
- Environmental chemistry: is the scientific study of the chemical and biochemical phenomena that occur in natural places.
- Industrial chemistry: is concerned with using chemical and physical processes to transform raw materials into products that are beneficial to humanity.
- Polymer chemistry: is a sub-discipline of chemistry that focuses on the chemical synthesis, structure, chemical and physical properties of polymers and macromolecules.

What type of student would do well in Chemistry?

- A student with an enquiring mind who enjoys Science, has an ability to problem solve and who is comfortable with Maths (Higher level Maths is not a requirement).
- A student who is hardworking, likes to challenge themselves and is willing to make and learn from their mistakes.
- A student who likes structure and will work to gain understanding by problem solving.

To what careers does Chemistry lend itself well?

- Forensic Science
- Environmental Science
- Engineering
- Medicine
- Pharmacy
- Dentistry
- Sports Science
- Chemical and Biological Sciences
- Nutrition
- Teaching

Similarities/Differences between Junior and Senior Cycle Chemistry:

- Junior Cycle Chemistry involves the study of matter, the changes it undergoes and the energy involved.
- Students learn to interpret their observations by considering the properties and behaviour of atoms, molecules, and ions. They learn to communicate their understandings using representations and the symbols of chemistry. They are better able to understand science-related challenges, such as environmental sustainability and the development of new materials, and sources of energy.

- Leaving Certificate Chemistry builds on this learning with more detailed study of matter.
- The syllabus aims to encourage an appreciation of the scientific, social, economic, environmental and technological aspects of chemistry. It aims to develop an appreciation of scientific method and the development of skills in laboratory procedures, skills of observation, analysis, evaluation, communication and problem-solving.

How is the subject examined at Leaving Certificate?

A written examination at Higher and Ordinary level comprises 100% of marks. The exam paper is three hours in duration, comprising of two sections from which eight questions must be answered.

- Section A – Three questions on practical activities (answer min of two)
- Section B – Eight questions (answer 5/6) on theory and some aspects of practical work.

What other school subjects is it linked to at Leaving Certificate?

- Biology
- Geography
- Maths
- Physics
- Social and Scientific

What type of skills will studying Chemistry help to develop?

- Laboratory/practical skills
- Observation
- Working as part of a team/on own initiative
- Analysing
- Evaluating
- Communicating/self confidence
- Problem-solving & logical thinking
- Self-discipline & resilience.

What do students like about Chemistry?

- Its practical nature
- Encourages active thinking
- Its link with everyday life
- Problem solving component can be very rewarding
- Allows huge scope for self-directed learning and discovery.

What may students find hard about Chemistry?

- Chemical concepts
- Time consuming
- Understanding must come before learning
- Needs resilience to ‘keep at it’ and not give up when challenged.