

## **Course outcomes of Chemistry**

A successful chemist is not only self motivated but should be a team player and have good written and oral communication skill. Students graduating with a B.Sc. in Chemistry would be able to:

### **Physical Chemistry**

- Can know the solid, liquid, gaseous & colloidal states.
- Can determine the logarithms, antilogarithms, slopes & draw graphs.
- Students got thorough knowledge regarding chemical kinetics, catalysis, First law of thermodynamics, Second law of thermodynamics ,basic terms used in Chemical equilibrium, Phase equilibrium, electrochemistry & nanomaterial.
- They can know the basic concepts of quantum chemistry, Spectroscopy, laws of photochemistry, optical activity & dipolemoment.
- They acquired skill for handling instruments like conductometer, potentiometer, pH-meter, polarimeter etc. & can determine the viscosity of given liquid, surface tension, equivalent weight.

### **Organic Chemistry**

- Students can write the IUPAC name of any organic compounds from their structure and draw its structure from its IUPAC name.
- They can know the concept of alkanes, alkenes, aromatic compounds, alcohols, phenols, aldehydes, ketones, carboxylic acids, amines, amides & stereochemistry.
- They are able to identify the types of reactions and write its mechanism, general molecular formula, preparation and properties of saturated and unsaturated hydrocarbons.
- They can understand different types of spectroscopy and their applications to organic compounds

- They learn about synthetic polymers, fats, oils, dyes, drugs, detergents.
- They can draw mechanism of various Name reactions, organic compounds and their derivatives & can explain the preparation & properties of organometallic compounds, heterocyclic compounds, carbohydrates.
- Student acquired experimental skill in qualitative analysis of binary mixture containing two solid components & prepares different derivatives of the same, perform quantitative analysis of organic compound & recrystallize the given organic compound.

### **Inorganic Chemistry**

- Gained the knowledge of Periodicity, General properties of atoms, Ionisation energy, Electron affinity, Bohr's atomic model, concept of shells, subshells and orbitals.
- They can know the properties of S- block, P-block elements.
- They familiarize with the concept of hybridization, coordination chemistry, various properties of Lanthanides, Actinides, radioactivity & concepts of various theories of acid & bases.
- Gain the knowledge of different chemical bonds and various types of hybridization, properties, preparation and structure of different inert gases.
- Students can prepare different complex and estimate the ions gravimetrically and volumetrically & acquired experimental skill in separation of Inorganic binary mixture containing two acidic & two basic radicals.

### **Scope of Subject**

- At the completion of B. Sc. in Chemistry the students are able to provide a broad foundation in chemistry that stresses scientific reasoning and

Analytical problem solving with a molecular perspective, achieve the skills required to succeed in graduate school, the chemical industry and professional school.

- Get exposures of a breadth of experimental techniques using modern instrumentation.
- Understand the importance of the Periodic Table of the Elements, how it came to be, and its role in organizing chemical information.
- Understand the interdisciplinary nature of chemistry and to integrate knowledge of mathematics, physics and other disciplines to a wide variety of chemical problems.
- Learn the laboratory skills needed to design, safely and interpret chemical research.
- Acquire a foundation of chemistry of sufficient breadth and the depth to enable them to understand and critically interpret the primary chemical literature.
- Develop the ability to communicate scientific information and research results in written and oral formats.
- Learn professionalism, including the ability to work in teams and apply basic ethical principles.

### **Course outcomes**

**Scope for Higher studies after B.Sc. Chemistry:** The B.Sc. Chemistry graduates have many options for their higher studies. Majority of these graduates opt for master's degree in the same. But they can also choose various specialized areas in this field for the PG courses as: M.Sc. Chemistry, M.Sc. Analytical Chemistry, M.Sc. Drug Chemistry, M.Sc. Organic Pharmaceutical Chemistry, M.Sc. Physical & material Chemistry & MBA (Master of Business Administration)

## **Job Opportunities**

- Chemistry graduates are recruited by pharmaceutical companies as Medical Representatives.
- Chemistry graduates are eligible for BARC Entrance Examination for recruitment as scientists.
- Institutes and organizations such as Sri Ram Institute of Industrial Research, Dabur Research Foundation etc. recruit science graduates as technical assistants.
- Like other graduates, chemistry graduates may appear for Entrance Examinations to the Civil Services & Banking Services.
- Jobs as scientists of various denominations are available through entrance examinations in NCL, CDRI (lucknow), WCSIR, DRDO, ONGC, GSI, BIS,IIT,IIIM and other scientific organizations after post-graduation in chemistry or allied fields.
- Some companies recruit fresh graduates as Management Trainees and give them on-the-job training.