

## Complementary Course Outcome

### Chemistry

Sl No	Name of the course	Outcome
1	General Chemistry	<ul style="list-style-type: none"><li>• To familiarize with the history, basic concepts and theories of chemistry.</li><li>• To gain basic knowledge of qualitative and quantitative analysis.</li><li>• To make a clear picture about atomic structure by understanding the impact of quantum revolution.</li><li>• To analyze various theories of chemical bonding.</li><li>• To understand the concepts of nuclear chemistry from the bottom and its applications to various emerging fields.</li><li>• To understand the biological aspects of chemistry and applications in biological systems.</li></ul>
2	Physical Chemistry	<ul style="list-style-type: none"><li>• To gain detailed knowledge of laws of thermodynamics.</li><li>• To understand the principles and properties of gaseous, liquid and solid states.</li><li>• To understand what are solutions and to be familiar with colligative properties and their applications.</li><li>• To understand different laws of electrochemistry and its applications in relevant areas.</li></ul> <p>To compare different electrochemical cells</p>
3	Organic Chemistry	<ul style="list-style-type: none"><li>• To understand basic concepts of organic chemistry with a knowledge of different electron displacement effects and reaction intermediates.</li><li>• To familiarize conformations of some simple molecules and understand the concepts of optical and geometrical isomerism with examples.</li><li>• To understand preparation, reactions and applications of halogen compounds, alcohols, phenols, ethers, aldehydes, ketones, carboxylic acids, nitro compounds, amines and diazonium salts.</li><li>• To familiarize with various important naming reactions of organic chemistry.</li><li>• To understand the chemistry of biological molecules like carbohydrates, lipids, proteins and nucleic acids including their classification, structure and applications.</li><li>• To familiarize with natural products particularly alkaloids and terpenes with example</li></ul>
4	Physical and Applied Chemistry	<ul style="list-style-type: none"><li>• To understand what are colloids, their classification, preparation, properties and applications.</li><li>• To understand of concepts and theories of chemical kinetics in detail and differentiate theories of catalysis.</li><li>• To familiarize various chromatographic techniques, their principle and applications.</li><li>• To gain deep knowledge of principle of different spectroscopic</li></ul>

		<p>techniques like IR, UV-Visible and NMR spectroscopy.</p> <ul style="list-style-type: none"> <li>• To understand classifications, structure and applications of various polymers with examples.</li> <li>• To understand different type of pollutions in its chemical aspect as familiarizing the reasons of pollution and find out how to reduce them.</li> <li>• To understand deeply how chemistry is related to day to day life.</li> </ul>
5	Chemistry Practical	<ul style="list-style-type: none"> <li>• To develop awareness of handling laboratory instruments and laboratory safety like first aid and treatment of fires.</li> <li>• To develop analytical skills in volumetric analysis.</li> <li>• To understand the principles behind the gravimetry and to apply it in quantitative analysis.</li> <li>• To develop talent in inorganic qualitative analysis.</li> <li>• To determine physical constants like melting and boiling points.</li> <li>• To develop skills in organic preparations to ensure maximum yield.</li> </ul>