



Course Outcomes of B.Sc. Chemistry (B.Sc. 1st year)

Sr. No	Course Title	Course Code	Course Outcomes
1.	Atomic structure, bonding, general organic chemistry & aliphatic hydrocarbons	CHEM 101	❖ This Course explains various atomic theories, Quantum mechanical model and Quantum numbers. ❖ The students learn and understand the preparation, properties and uses of various organic substances. ❖ It introduces a framework for learning about electronic configurations of elements, Ionic, covalent bonding and MO theories.
2.	States of Matter and Chemical Kinetics and Functional Organic Chemistry	CHEM 102	❖ It derives and provides a deep understanding about kinetic gas theory and properties of liquids and solids. ❖ It describes various method of preparation and chemical properties of carboxylic acids, their derivatives, amines and diazonium salts. ❖ It explains thoroughly the structure, properties and uses of Amino acids, Peptides, proteins and Carbohydrates.

Course Outcomes of B.Sc. Chemistry (B.Sc. 2nd year)

3.	Solutions, phase equilibrium, conductance, electrochemistry & organic chemistry	CHEM 201	❖ To develop understanding of ideal and nonideal solutions, concept of Raoult's Law, drawing phase diagrams of one and two component system. ❖ To develop understanding of conductivity, ❖ Kohlrausch's law, conductometric titrations. ❖ To clear the concept of transference number by Hittorf's method and Moving Boundary method. ❖ To clear the basic concepts of electrochemistry including types of electrodes, EMF, concentration cells, Liquid junction potential. ❖ Develop critical thinking, problem solving and analytical capabilities. ❖ Preparation and reactions of carboxylic acids, their derivatives, concept of nucleophilicity, Aliphatic and aromatic amines, Name reactions and some organic conversions.
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4.	Chemistry of main group elements, chemical energetics and equilibria	CHEM 202	❖ This course aims to clear the basic concepts of s block and p block elements of the periodic table, properties and reactions of compounds of these elements. ❖ It also explains the potential energy stored in the arrangements or bondings of atoms in a substance. ❖ This course is intended to provide students with the basic knowledge of chemical equilibrium and the factors that may affect a chemical equilibrium. It also explains the importance of chemical equilibrium in the day to day life.
5.	Basic analytical chemistry (SEC 1)	CHEM203 (SEC)	❖ This course is designed to introduce the students with Analytical chemistry, Analysis of soil, pH determination of soil. ❖ Analysis of water, determination of acidity and alkalinity and dissolved oxygen in sample of water, Introduction to complexometric titrations. ❖ The students are introduced to the complete knowledge of Chromatography and analysis of mixture of ions and paint components by chromatographic techniques. ❖ Analysis of cosmetics, types of cosmetics, study of phenolphthalein in trap cases and E14 arson accelerators, gasoline.
6.	Fuel chemistry & chemistry of cosmetics & perfumes (SEC 2)	CHEM204 (SEC)	❖ It includes the study of energy resources, study of coal, lubricants including types and properties. ❖ This course is intended to provide students a general study and knowledge about the preparation of cosmetics and essential oils. ❖ Students will gain a comprehensive understanding of the chemical principles and processes involved in these fields
Course Outcomes of B.Sc. Chemistry (B.Sc. 3rd year)			
7.	Polynuclear hydrocarbons, Dyes, heterocyclic compounds and spectroscopy (UV, IR, NMR)	CHEM 301	❖ This course is expected to provide students a better understanding of the various theories and principles related to UV, IR and NMR spectroscopy. ❖ It explains preparation and properties of different types of dyes and heterocyclic compounds. ❖ It also provides an understanding of polynuclear hydrocarbons and their comparative properties with respect to benzene.



8.	Chemistry of transition and inner transition elements, organometallic compounds	CHEM 304	❖ Students will have a clear understanding of d and f block elements, their properties and their complex formation tendencies. ❖ Students will understand the concept of organometallic compounds and their utility in everyday science. ❖ It explains the chemistry of coordination compounds, their bondings, stability and preference of bonding with ligands to give specific geometries.
9.	Polymer Chemistry	CHEM305	❖ Classify various types of polymers. ❖ Explain and identify preparation methods, properties and uses of various types of polymers. ❖ Students will be able to define polymers, understand different classifications, and grasp the basics of polymerization processes. ❖ Students will understand the relationship between the structure of a polymer (e.g., molecular weight, branching, crystallinity) and its physical and chemical properties.
10	Chemical Technology and Society, and business skills for chemistry	CHEM307 (SEC)	❖ It explains the use of chemical technology in society. ❖ It provides the understanding of basic business skill in chemistry and explain various terms used in chemical industry. ❖ The course will also include training in laboratory safety, analytical techniques, and the interpretation of experimental results, enhancing practical skills. ❖ Students will gain an understanding of the societal benefits of chemistry, its impact on various aspects of life, and its role in addressing societal challenges.
11.	Pesticides Chemistry and Pharmaceutical Chemistry	CHEM308 (SEC)	❖ Explain the preparation and use of various pesticides and medicines used in our daily life. ❖ Explains the preparation and uses of different types of medicines used in our daily life. ❖ Students will learn about drug discovery, design, and development, including the synthesis and properties of various drug classes like analgesics, antipyretics, and antibiotics. ❖ Students will understand the importance of pesticides in protecting crops and other areas, as well as the need for safe and responsible use.