

Program/Course outcomes
B.A., B.Com. B.Sc. Honours/Program

ProgrammeName: B.Sc. Program course (CBCS) with CHEMISTRY

Programme Outcomes

CourseOutcomes:

Course Code	Course Name	Course Outcomes
DSC I: Theory	Atomic Structure, Bonding, General Organic Chemistry & Aliphatic Hydrocarbons	CO-1 Students will be able to apply the concepts of basic quantum chemistry in understanding and explaining the atomic structure, chemical bonding. CO-2 Will be able to explain structure and physical/ electronic properties of simple inorganic molecules CO-3 Will develop fundamental concepts on organic chemistry and stereochemistry. CO-4 Will learn about synthesis, properties and reactions of aliphatic hydrocarbons.
DSC I : Practical		CO-1 Students will learn to estimate ions or salts by acid-base titration method and oxidation-reduction titration method. CO-2 Will learn to detect special elements (N, S, Cl, Br, I) in organic compounds. CO-3 Will gain hands-on experience on different chromatographic separation techniques.
DSC II: Theory	Chemical Energetics, Equilibria& Functional Group Organic Chemistry-I	CO-1 Students will learn and understand laws of thermodynamics, thermochemistry and chemical equilibrium. CO-2 Will gain concept on theories of ionic equilibrium, hydrolysis of salt, common ion effect, solubility product. CO-3 Will learn in detail about the preparation, properties, chemical reactions of aromatic hydrocarbons, alcohols and phenols, aldehydes and ketones.

DSC II: Practical		CO-1 Will learn to prepare buffer solution of different pH and determine pH of unknown solution. (using pH meter) CO-2 Will learn preparation of organic compounds, purification methods and determination of melting point and boiling point.
DSC III: Theory	Solutions, Phase Equilibria, Conductance, Electrochemistry & Functional Group Organic	CO-1 Students will gain concepts of ideal, non-ideal solution, phase diagram and its application and phase equilibrium. CO-2 Understand fundamental concepts of conductance of solutions and its application and concepts of redox potentials and electrochemistry.

	Chemistry-II	<p>CO-3 Will learn in detail about the preparation, properties, chemical reactions of carboxylic acids and derivatives</p> <p>CO-4 Will learn about amines, diazonium salts, amino-acids and carbohydrates.</p>
DSC-III : Practical		<p>CO-1 Will learn to perform conductometric and potentiometric titrations.</p> <p>CO-2 Will learn systematic qualitative analysis of functional groups in organic compounds</p>
SEC-1 (DSC) Theory & Practical	Pharmaceutical Chemistry	<p>CO-1 Students will be able understand about the drug discovery, designing and development of various important medications.</p> <p>CO-2 Will know about aerobic and anaerobic fermentation, importance of Vitamins and Amino acids, synthesis of Penicillin, Cephalosporin, Chloromycetin, Streptomycin and their role as an antibiotic.</p> <p>CO-3 Will learn the preparation and analysis of aspirin and magnesium bisilicate in laboratory.</p>
DSC IV: Theory	Transition Metal & Coordination Chemistry, States of Matter & Chemical Kinetics	<p>CO-1 Gain knowledge on bonding, stereochemistry and properties of coordination complexes.</p> <p>CO-2 Will learn about crystal field theory and its application.</p> <p>CO-3 Understanding of behavior of real gases, properties of liquids (surface tension, viscosity).</p> <p>CO-4 Will be able to understand concept of reaction rates, its determination and related theories.</p>
DSC IV: Practical		<p>CO-1 Students will perform semi-micro qualitative detection of acid and basic radicals.</p> <p>CO-2 Will learn to perform complexometric titration (determine hardness of water, etc)</p> <p>CO-3 Will learn to experimentally determine viscosity and surface tension of an unknown liquid with respect to water.</p> <p>CO-4 Will study the kinetics of acid-catalyzed hydrolysis of methyl acetate.</p>
SEC-2 (DSC) Theory & Practical	Green Methods in Chemistry	<p>CO-1 Will learn about green chemistry and its importance.</p> <p>CO-2 Will study about the principles of green chemistry and designing the green synthetic routes.</p> <p>CO-3 Will learn to synthesize a number of organic compounds in the laboratory using green approach.</p>
DSE I (DSC): Theory	Inorganic Materials of Industrial Importance	<p>CO-1 Students will develop knowledge on composition and applications of important industrial materials like glass, ceramics, surface coatings, fertilizers, alloys.</p> <p>CO-2 Will learn about working principle and application of different batteries.</p>
DSEI: Practical		<p>CO-1 Will learn to determine free acidity, calcium in fertilizer.</p> <p>CO-2 Estimation of composition of dolomite and cement.</p>
SEC - 3 (DSC)	Pesticide Chemistry	<p>CO-1 Will acquire knowledge about the preparation, structures,</p>

	(Theory & Practical)	<p>properties, reactions, benefits and adverse effects of pesticide compounds.</p> <p>CO-2 Will gain knowledge about the fertility of soil and its maintenance and how to increase crop production.</p> <p>CO-3 Will be able to calculate acidity/alkalinity in given sample of pesticide formulations.</p>
DSE 2 (DSC):Theory	Industrial Chemicals and Environment	<p>CO-1 Will gain thorough knowledge on manufacture and application of industrial chemicals and gases.</p> <p>CO-2 Will learn about different kinds of environmental pollution</p> <p>CO-3 Gain knowledge on issues like global warming, ozone depletion, waste water treatment, solid waste management, nuclear waste and its management.</p>
DSE 2: Practical		CO-1 Will learn to estimate chloride, sulphate and total alkalinity of water samples by simple titration method
SEC-4 (DSC)	Chemistry of Cosmetics & Perfumes (Theory & Practical)	<p>CO-1 Students will gather detail knowledge of the chemistry of cosmetics and perfumes</p> <p>CO-2 Will learn industrial preparation, uses and harmful effects of various cosmetics and perfumes.</p> <p>CO-3 Will learn preparation of talcum powder, shampoo, face cream, nail polish and nail polish remover. Hence they will develop background to work in various cosmetic industries.</p>