

Dept. of Chemistry

Course Outcome

B. Sc. Chemistry, 3 years (Six semesters) Course

Students will develop the following concepts

Semester I

Atomic Structure, Bohr's theory, Wave mechanics, Pauli's Exclusion Principle, Periodicity of Elements, Chemical Bonding, Oxidation-Reduction, Gaseous state - Kinetic molecular model of a gas, Maxwell distribution, Liquid State, Solid State, Ionic equilibrium

Semester II

Organic Chemistry I - Basics of Organic Chemistry, Stereochemistry, Chemistry of Aliphatic Hydrocarbons - sigma bonds, pi bonds, alkenes, Aromatic Hydrocarbons, Chemical Thermodynamics, Free Energy Functions, Systems of Variable Composition, Solutions and Colligative Properties

Semester III

General Principles of Metallurgy, Acids and Bases, Chemistry of *s* and *p* Block Elements, Noble Gases, Inorganic Polymers, Chemistry of Halogenated Hydrocarbons, Alcohols, Phenols and Epoxides, Carbonyl Compounds, Carboxylic Acids and their Derivatives, Sulphur containing compounds, Phase Equilibrium, Chemical Kinetics, Catalysis, Surface chemistry

Semester IV

Coordination Chemistry, Transition Elements, Lanthanoids and Actinoids, Bioinorganic Chemistry, Nitrogen Containing Functional Groups, Polynuclear Hydrocarbons, Heterocyclic Compounds, Alkaloids, Terpenes, Conductance, Electrochemistry, Electrical & Magnetic Properties of Atoms and Molecules

Semester V

Nucleic Acids, Amino Acids, Peptides and Proteins, Enzymes, Lipids, Pharmaceutical Compounds, Quantum Chemistry, Molecular Spectroscopy, Photochemistry, DSE1 – Analytical methods in Chemistry OR Applications of Computers in Chemistry OR Nanoscale Materials and their Applications; DSE2 - Instrumental Methods of Chemical Analysis, OR Polymer Chemistry OR Inorganic Materials of Industrial importance

Semester VI

Theoretical Principles in Qualitative Analysis, Organometallic Compounds, Reaction Kinetics and Mechanism, Catalysis by Organometallic Compounds, Organic Spectroscopy, Carbohydrates, Dyes, Polymers, DSE 3 - Green Chemistry, OR Molecular Modelling & Drug Design; DSE 4 - Industrial Chemicals and Environment, OR Novel Inorganic Solids OR Research Methodology for Chemistry