Course Specific Outcome

[Department of Chemistry: Organic Section]

For Chemistry Honours Students

Course	Course prerequisite	Expected outcome
CORE T1: ORGANIC CHEMISTRY-I	Elementary knowledge of bonding in organic molecules	Development of insight into • Molecular structure • Physical properties • Basic stereochemical aspects.
CORE P1: ORGANIC CHEMISTRY-I LAB	Acquaintance with common apparatus used in the laboratory	Acquisition of experimental knowledge in • Identification of organic compounds • Separation of mixture
CORE T4: ORGANIC CHEMISTRY-II	Elementary knowledge of bonding and reactivity	Familiarity with • Static stereochemistry • Kinetics, energetics • Mechanistic and stereochemical principles of substitution and elimination reactions
CORE P4: ORGANIC CHEMISTRY-II LAB	Acquaintance with common apparatus used in the laboratory	Acquisition of knowledge in • Preparation of organic compounds • Purification of the prepared compound • Characterization of the synthesised compound • Determination of yield of the product
CORE T7: ORGANIC CHEMISTRY-III	Elementary knowledge of reactivity patterns	Introduction to • Functional group and reagent chemistry in terms of mechanistic and stereochemical aspects
CORE P7: ORGANIC CHEMISTRY-III LAB	Acquaintance with common apparatus used in the laboratory	Familiarity with • Identification of organic compound through systematic analysis

CORE T10: ORGANIC CHEMISTRY-IV	Basic knowledge in reagents, reaction types and electromagnetic radiation	Familiarity with • some organic name reactions • synthetic strategy • structure elucidation in terms of spectroscopic techniques
CORE P10: ORGANIC CHEMISTRY-IV LAB	Basic knowledge of handling burette and pipette	Understanding of the • Principles and experimental methods of the quantitative estimation of an organic compound
CORE T12: ORGANIC CHEMISTRY-V	Elementary idea about writing reaction mechanism, drawing of molecular orbitals and basic stereochemical principles	Understanding of synthesis and reactivity of • Polynuclear hydrocarbons • Heterocyclics • Carbohydrates • Biomolecules Familiarity with static and dynamic stereochemistry of six membered rings Role of orbital symmetry in organic reactions
CORE P12: ORGANIC CHEMISTRY-V LAB	Basic knowledge of chromatography, chemical shift and coupling constants	Familiarity with • Chromatographic separation of a mixture • Interpretation of IR and NMR spectra
DSE T4: GREEN CHEMISTRY	Elementary idea about the hazardous aspects of chemical processes and reactions	• Introduction to principle and applications of sustainable, environmentally benign chemistry
DSE P4: GREEN CHEMISTRY LAB	Elementary idea about environmental hazards	Introduction to • Methodologies directed towards minimisation of chemical hazards

For Chemistry General Students

Course	Course prerequisite	Expected outcome
CEMGCOR01T: Section B - ORGANIC CHEMISTRY I	Elementary knowledge of bonding in organic molecules	Development of insight into • Molecular structure • Physical properties of organic molecules Introduction to • Basic stereochemistry • Mechanistic and stereochemical aspects of substitution and elimination reactions • Chemistry of aliphatic hydrocarbons
CEMGCOR01P: Section B - ORGANIC CHEMISTRY LAB	Acquaintance with common apparatus used in the laboratory	Familiarity with • Qualitative Analysis of Single Solid Organic Compound
CEMGCOR03T: Section B - ORGANIC CHEMISTRY II	Elementary knowledge of reactivity patterns	. Introduction to • Functional group chemistry in terms of elementary mechanistic aspects
CEMGCOR03P: Section B - ORGANIC CHEMISTRY LAB	Acquaintance with common apparatus used in the laboratory	Acquisition of experimental knowledge in • Identification of solid and liquid organic compounds

Course specific outcome: Chemistry Hons (Physical Chemistry)

Course	**Course prerequisite**	Expected outcome
CEMACOR02T: **PHYSICALCHEMISTRY-I**	**Elementary idea of Chemical Thermodynamics Kinetic Theory and Gaseous state Chemical kinetics**	**Knowledge about the energetics of different physico chemical processes Equation of state, distribution function, Equipartion of energy Extent of reaction; Kinetic study to reveal mechanistic pathway**
CEMACOR05T: **PHYSICAL CHEMISTRY-II**	**Transport processes for fluids along with conductometric study. Application of Thermodynamic study. Foundation of Quantum Mechanics**	**Knowledge about the velocity of molecules /ions in different environment. Knowledge about the chemical potential . Wave and particle nature of matter , Planck Theory**
CEMACOR08T: **PHYSICAL CHEMISTRY-III**	**Application of Thermodynamics – II Electrical Properties of molecules Quantum Chemistry**	**Knowledge about colligative properties, Phase Rule, Binary Solutions, Ionic equilibria, Electrochemical cell, Angular momentum Qualitative treatment of hydrogen atom and hydrogen-like ions:**
CEMADSE01T: **ADVANCED PHYSICAL CHEMISTRY**	**Properties of solids,Laws of Crystallography: Statistical Thermodynamics. Polymers**	**Understanding of Geometry of crystals, Statistical distribution of molecules Polymeric substance**
CEMACOR14T: **PHYSICAL CHEMISTRY- IV**	**Molecular Spectroscopy Photochemistry Surface phenomenon**	**Understanding of spectral study related to rotational & vibrational motion of molecules .Absorption of light and related phenomenon , surface chemistry .**