

## COURSE OUTCOME

Dept. of Chemistry

### GENERAL COURSE

SEM & COURSE CODE	Brief description of the Topic	COURSE OUTCOME
SEM 1 GE1/CC1 (THEORY)	Kinetic Theory of Gases and Real gases, Liquids, Chemical Kinetics, Atomic Structure, Chemical Periodicity Acids and bases, Fundamentals of Organic Chemistry, Stereochemistry, Nucleophilic Substitution and Elimination Reactions.	Students will get some knowledge on basic inorganic, organic and physical chemistry.
SEM 1 GE1/CC1 (PRACTICAL)	Volumetric Estimation	Students will acquire hand-on experience in doing titration based quantitative estimation of different types of chemical systems.
SEM 2 GE2/CC2 (THEORY)	Chemical Thermodynamics, Chemical Equilibrium, Solutions, Phase Equilibria, Solids, Aliphatic Hydrocarbons, Error Analysis and Computer Applications, Redox reactions	In this topic students will have knowledge and understanding in chemical thermodynamics, equilibrium, redox reactions and aliphatic hydrocarbons.
SEM 2 GE2/CC2 (PRACTICAL)	Basic Physical Chemistry Experiments	In this topic students will learn simple physical chemistry practical experiments based on viscosity, surface tension etc.
SEM 3 GE3/CC3 (THEORY)	Chemical Bonding and Molecular Structure Ionic Bonding Comparative study of p-block elements Transition Elements (3d series) Coordination Chemistry Electrochemistry, Aromatic hydrocarbons and Organometallic Compounds	The course outcome of this topic is to provide exclusive knowledge and understanding of bonding and molecular structure of simple inorganic molecules. They will also learn about electrochemistry, some organic functional molecule and co-ordination chemistry.

SEM 3 GE3/CC3 (PRACTICAL)	Qualitative semi-micro analysis of mixtures containing two radicals. Emphasis should be given to the understanding of the chemistry of different reactions	Students will be developed with knowledge of carrying out of qualitative semi-micro analysis of acid and basic radicals.
SEM 4 GE4/CC4 (THEORY)	Alcohols, Phenols and Ethers Carbonyl Compounds Carboxylic Acids and Their Derivatives Amines and Diazonium Salts Amino Acids and Carbohydrates Crystal Field Theory Quantum Chemistry and Spectroscopy	The students will understand properties and reactions of different organic molecule having different functional group attached. Students will also get knowledge of crystal field theory, quantum chemistry and spectroscopy.
SEM 4 GE4/CC4 (PRACTICAL)	Qualitative Analysis of Single Solid Organic Compound(s) Identification of a pure organic compound	Students will learn to do qualitative analysis of single solid organic and will be able to identify a pure organic compound according to their functional group detection.
SEM 5 DSEA-2 (Theory & Practical)	Inorganic materials of industrial importance, Silicate industries, Cements and fertilizer, Batteries Determination of acidity, calcium in fertilizers etc.	Students will get an exclusive knowledge on inorganic materials of industrial importance like glass, ceramics, cements etc.
SEM 6 DSE B-2 (Theory & Practical)	Analytical methods in Chemistry, Basic principles of quantitative analysis, Thermal methods of analysis, Electroanalytical methods, Separation techniques	Students will get knowledge of different analytical technique for separation such as chromatography and solvent extractions, will be able to analyse soil, ion exchange and spectrophotometry.
SEM 5 SEC-A2	Analytical Clinical Biochemistry	In this section students will learn about structures and function of biological molecule like carbohydrates, proteins, enzymes, lipids etc.
SEM 6 SEC-B3	Pharmaceutical Chemistry	Students will gain advance theoretical knowledge on drug synthesis and pharmaceutical chemistry

## **Programme Outcomes (PO)**

PO1 Critical Thinking: Take informed actions after identifying the assumptions that frame our

thinking and actions, checking out the degree to which these assumptions are accurate and valid, and

looking at our ideas and decisions (intellectual, organizational, and personal) from different perspectives. PO2 - Effective Communication: Speak, read, write and listen clearly in person and through electronic media in English and in one Indian language, and make meaning of the world by

connecting people, ideas, books, media and technology.

PO3 - Social Interaction: Elicit views of others, mediate disagreements and help reach conclusions in group settings.

PO4 - Effective Citizenship: Demonstrate empathetic social concern and equity centred national development, and the ability to act with an informed awareness of issues and participate in civic life through volunteering.

PO5 - Ethics: Recognize different value systems including your own, understand the moral

dimensions of your decisions, and accept responsibility for them.

PO6 - Environment and Sustainability: Understand the issues of environmental contexts and

sustainable development.

PO7 - Self-directed and Life-long Learning: Acquire the ability to engage in independent and life- long learning in the broadest context socio-technological changes.

## **Programme Specific Outcomes (PSO)**

PSO1: Upon successful completion of the B.ScHonoursprogramme students should be able to understand essential facts, concepts, principles and theory relating to chemistry and should apply such knowledge to solve problems.

PSO2: They will acquire communication skills, both oral and written in subject.

PSO3: They acquire the skills of mathematical numerical calculation, error analysis and data representation.

PSO4: They will learn to use computers to solve chemical problems as well as for information

retrieval. They will acquire skills in the practical application of theory using computer software and

models.

PSO5: Most importantly, they will learn to the techniques of safe handling of hazardous chemicals in the laboratory, monitor reactions, conduct laboratory experiments which are documented in chemical literature, and report the research results in proper format.