

VIDYANAGAR COLLEGE

DEPARTMENT OF CHEMISTRY

Programme Outcome and Course Outcome

Programme Outcomes (PO)

After successful completion of three years degree program in Chemistry General, a student should be able to :

PO1 - Make aware and understand laboratory practices, safety and security , thus opening job opportunity in Pharma industries, various laboratories.

PO2 - Gain the knowledge of chemistry through theory and practical

PO3- Understand the various types of Organic and Inorganic reaction

PO4- Solve the reaction mechanism and predict the final product

PO5- Know the structure and bonding in molecules or ions

PO6 – Get the knowledge of drugs and pharmaceuticals.

PO7 - Social Awareness: As an inhabitant of this green world the graduates in chemistry learns how to do reactions in green methods and keep our planet clean and suitable for living to all.

Course Outcomes (CO)

Semester	Course Code	Course Outcome
Sem 1	CC 1 / GE 1	CO-1: To know in detail about Kinetic Theory of Gases; Liquids and Chemical Kinetics
		CO-2: To learn the basic concept, terms and equations of Atomic Structure; Chemical Periodicity and Acids and Bases
		CO-3: To learn about the Fundamentals of Organic Chemistry; Stereochemistry, Nucleophilic Substitution Reaction and Elimination Reaction
		CO-4: To learn practically how to do the quantitative estimation of ions in a solution by using iodometric titration, permanganate titration and dichromate titration.
		CO-5: To learn how to estimate sodium carbonate and bi-carbonate present in a mixture and estimate of water of crystallization in Mohr's salt by titrating with KMnO_4
		CO-6: To study the estimation of oxalic acid by titrating it with KMnO_4
Sem 2	CC 2 / GE 2	CO-1: To understand about Chemical Thermodynamics, Chemical equilibrium, Solutions, Phase Equilibrium and Solids.
		CO-2: To learn about synthesis, properties and reactions of Aliphatic Hydrocarbons
		CO-3: To understand about Error analysis and Computer Applications.
		CO-4: To know the basic knowledge, types and applications Redox Reactions
		CO-5: To study the kinetics of acid-catalyzed hydrolysis of methyl acetate and decomposition of H_2O_2
		CO-6: To determine the viscosity and surface tension of unknown liquid and the solubility of sparingly soluble salt in water
		CO-7: Preparation of buffer solutions and find the pH of an unknown buffer solution by colour matching method

Sem 3	CC 3 / GE 3	CO-1: To learn about Chemical bonding and Molecular structure
		CO-2: To comparatively study the p-block elements
		CO-3: To learn Transition Elements and Co-ordination Chemistry
		CO-4: To know the basic concepts, equations and applications of Electrochemistry
		CO-5: To understand about the synthesis, properties, chemical reactions of Aromatic Hydrocarbons, Organometallic Compounds and Aryl Halides
		CO-6: To study experimentally the qualitative detection of known and unknown radicals in a mixture
Sem 4	CC 4 / GE 4	CO-1: To learn reactions of Alcohol, Phenol, Ethers, Aldehydes, Ketones, Carboxylic acids, Esters, Amines, Diazonium salts, Amino-acids and Carbohydrates.
		CO-2: To know in detail about Crystal Field Theory
		CO-3: To study the fundamental concepts of Quantum Chemistry and Spectroscopy
		CO-4: To learn experimentally the qualitative analysis of unknown solid organic compounds and also identification of pure solid and liquid organic compounds
Sem 5	DSE A2 Inorganic Materials of Industrial Importance	CO-1 : To learn about Silicate industries : Glass, Cement, Ceramics
		CO-2 : To know about Fertilizers
		CO-3 : To study Surface Coating : paints & varnishes
		CO-4 : To study Alloys, Catalysts, Batteries
		CO-5 : To study Chemical explosives
		CO-6 : To learn about analysis of Cement
		CO-7 : To learn how to Prepare pigment Zinc oxide in laboratory
		CO-8 : To learn about analysis of Fertilizers : Superphosphate, CAN, Ammonium sulfate

Sem 6	DSE B1 Green Chemistry and Chemistry of Natural Products	CO-1 : To understand basics of Green Chemistry
		CO-2 : To learn Principles of Green Chemistry and Designing Green synthesis
		CO-3 : To know examples of Green Reactions and some real world cases
		CO-4 : To know Future Trends in Green Chemistry
		CO-5 : To understand basics of Alkaloids, Terpenes
		CO-6 : To learn about some laboratory Green reactions – Benzoin condensation, Acetylation of p-amines, Benzilic acid from Benzil, [4+2] Cyclo-addition,
		CO-7 : To know preparation of Bio-diesel from Vegetable oil
Sem 3	SEC A1 Basic Analytical Chemistry	CO-1 : To understand introduction to Basic Analytical Chemistry
		CO-2 : To know about analysis of soil CO-3 : To learn how to analysis water
		CO-4 : To know about analysis of food products
		CO-5 : To learn about Chromatography and other separation techniques
		CO-6 : To learn about analysis of cosmetics
Sem 4	SEC 3 Pharmaceutical Chemistry	CO-1 : To know basic concepts of Drugs & Pharmaceuticals, Drug designing
		CO-2 : To know Basic Retrosynthetic approach of drug synthesis
		CO-3 : To know Synthesis of Analgesics, antipyretic, anti-inflammatory agents (Aspirin, paracetamol, Ibuprofen)
		CO-4 : To learn about antibiotics (Chloramphenicol); antibacterial and antifungal agents
		CO-5 : To know about antiviral agents (Acyclovir), HIV-AIDS related drugs AZT- Zidovudine
		CO-6 : To learn about Central Nervous System agents (Phenobarbital, Diazepam), Cardiovascular (Glyceryl trinitrate), antilaprosy drug (Dapsone)