DEPARTMENT OF CHEMISTRY

Programme Specific Outcomes (PSOs) – BSc Chemistry Programme

	Programme specific outcomes
PSO1	To enable the students to understand basic facts and concepts in chemistry and to apply its principles.
PSO2	To appreciate the achievements in chemistry and to know the role of chemistry in nature and in society.
PSO3	To familiarize with the emerging areas of chemistry and their applications in various spheres of chemical sciences and to apprise the students of its relevance in future studies.
PSO4	To develop skills in the proper handling of instruments and chemicals and to familiarize with the different processes used in industries and their applications.
PSO5	To develop an eco-friendly attitude by creating a sense of environmental awareness and to be conversant with the applications of chemistry in day-to-day life.

Course outcomes

Semester	Course Code	Course Name	Course outcomes
I	CHE1B01	Theoretical and Inorganic Chemistry-I	• CO1:To apply the methods of a research project.
			• CO2:To understand the principles behind volumetry.
			• CO3:Toanalyse the characteristics of different elements.
			• CO4:To distinguish between different acid base concepts.
			• CO5:Toanalyse the stability of different nuclei.
II	CHE2B02	Theoretical and Inorganic Chemistry-II	• CO1:To understand the importance and the impact of quantum revolution inscience.
			• CO2:To understand and apply the concept that the wave functions of hydrogen atom are nothing but atomic orbitals.

			• CO3 :To understand that chemical bonding is the mixing of wave functions of thetwo combining atoms.
			• CO4 :To understand the concept of hybridization as linear combination of orbitals of the same atom.
			• CO5:To inculcate an atomic/ molecular level philosophy in the mind.
III	CHE3B03	Physical Chemistry - I	• CO1 :To understand the properties of gaseous state and how it links to thermodynamic systems.
			• CO2 :To understand the concepts of thermodynamics and it's relation to statistical thermodynamics.
			• CO3:To apply symmetry operations to categorize different molecules.
IV	CHE4B04	Organic Chemistry– I	• CO1:To apply the concept of stereochemistry to different compounds.
			• CO2:To understand the basic concepts of reaction mechanism.
			• CO3 :To analyse the mechanism of a chemical reaction.
			• CO4:Toanalyse the stability of different aromatic systems.
IV	CHE4B05 (P)	Inorganic Chemistry Practical – I	• CO1:To enable the students to develop skills in quantitative analysis and preparing inorganic complexes.
			• CO2 :To understand the principles behind quantitative analysis.
			• CO3:To apply appropriate techniques of volumetric quantitative analysis in estimations.
			• CO4 :To analyse the strength of different solutions.

V	CHE5B06	Inorganic Chemistry – III	• CO1 :To understand the principles behind qualitative and quantitative analysis.
			• CO2 :To understand basic processes of metallurgy and to analyse the merits of • different alloys.
			• CO3:To understand the applications of different inorganic polymers.
			• CO4 :Toanalyse different polluting agents.
			• CO5:To apply the principles of solid waste management.
V	CHE5B07	Organic Chemistry – II	• CO1 :To understand the difference between alcohols and phenols.
			• CO2 :To understand the importance of ethers and epoxides.
			• CO3:To apply organometallic compounds in the preparation of different functional groups.
			• CO4 :To apply different reagents for the inter conversion of aldehydes, carboxylic acids and acid derivatives.
			• CO5 :To apply active methylene compounds in organic preparations
V	CHE5B08	PHYSICAL CHEMISTRY – II	• CO1 :To apply the concept of kinetics, catalysis and photochemistry to various chemical and physical processes.
			• CO2:To characterise different molecules using spectral methods.
			• CO3 :To understand various phase transitions and its applications.
V	CHE5D01	Environmental Chemistry	• CO 1: Recall the technical/scientific terms involved in pollution.
			• CO 2: Understand the causes and effects of air pollution.
			• CO 3: Understand the sources, types and effects of water pollution.

			• CO4:Describe water quality parameters.
			• CO5: Know soil, noise, thermal and radioactive pollutions and their effects.
			• CO6:Study various pollution control measures.
			• CO7:Understand the basics of green chemistry.
VI	CHE6B09	Inorganic Chemistry – IV	• CO1 :To understand the principles behind different instrumental methods.
			• CO2:To distinguish between lanthanides and actinides.
			• CO3 :To appreciate the importance of CFT.
			• CO4 :To understand the importance of metals in living systems.
			• CO5 :To distinguish geometries of coordination compounds.
VI	CHE6B10	Organic Chemistry – III	• CO1 :To elucidate the structure of simple organic compounds using spectral techniques.
			• CO2 :To understand the basic structure and tests for carbohydrates.
			• CO3 :To understand the basic components and importance of DNA.
			• CO4:To understand the basic structure and applications of alkaloids and terpenes.
			• CO5:To distinguish different pericyclic reactions.
VI	CHE6B11	Physical Chemistry – III	• CO1:To understand the basic concepts of electrochemistry.
			• CO2 :To understand the importance of colligative properties.
			• CO3:To relate the properties of materials/solids to the geometrical properties and chemical compositions.

VI	CHE6B12	Advanced and Applied Chemistry	• CO1: To understand the importance of nanomaterials
			• CO2:To appreciate the importance of green approach in chemistry.
			• CO3:To understand the uses and importance of computational calculations inmolecular design.
			• CO4:To understand the role of chemistry in human happiness index and lifeexpectancy
VI	CHE6B13(E3)	Medicinal And Environmental Cehmistry	• CO1:To understand the importance of drugs in human health
			• CO2:To understand the facts about common diseases and treatment
			• CO3:To identify the presence of toxic substances in atmosphere
			• CO4:To apply chemistry in treatment of water and sewage.
VI	CHE6B14(P)	Physical Chemistry Practical	• CO1:To enable the students to develop analytical skills in determining the physical properties (physical constants).
			• CO2 : To develop skill in setting up an experimental method to determine the physical properties
			• CO3: To understand the principles of Refractometry, Potentiometry and Conductometry.
VI	CHE6B15(P)	Organic Chemistry Practical	• CO1: To enable the students to develop analytical skills in organic qualitative analysis.
			• CO2 : To develop talent in organic preparations to ensure maximum yield

			• CO3: To apply the concept of melting or boiling points to check the purity of compounds
			• CO4 : To analyse and characterise simple organic functional groups.
			• CO5: To analyse individual amino acids from a mixture using chromatography
VI	CHE6B16(P)	Inorganic Chemistry Practcal-II	• CO1: To enable the students to develop analytical skills in inorganic quantitative analysis.
			• CO2 : To understand the principles behind gravimetry and to apply it in quantitative analysis
			• CO3: To understand the principles behind colorimetry and to apply it in quantitative analysis
VI	CHE6B17(P)	Inorganic Chemistry Practcal-III	• CO1:To enable the students to develop skills in inorganic qualitativeanalysis.
			• CO2: To understand the principles behind inorganic mixture analysis and to apply it in qualitative analysis.
			• CO3:To analyse systematically mixtures containing two cations and two anions.
VI	CHE6B18(Pr)	Project Work	• CO1 : To understand the scientific methods of research project.
			• CO2:To apply the scientific method in life situations.
			• CO3:To analyse scientific problems systematically.