

M.Sc Chemistry

Program specific outcome

PSO1	Gains complete knowledge about all fundamental aspects of all the elements of chemistry
PSO2	Understands the background of organic reaction mechanisms, complex chemical structures, instrumental method of chemical analysis, molecular rearrangements and separation techniques.
PSO3	Appreciates the importance of various elements present in the periodic table, coordination chemistry and structure of molecules, properties of compounds, structural determination of complexes using theories and instruments.
PSO4	Gathers attention about the physical aspects of atomic structure, dual behavior, reaction pathways with respect to time, various energy transformations, molecular assembly in nanolevel, significance of electrochemistry, molecular segregation using their symmetry.
PSO5	Learns about the potential uses of analytical industrial chemistry, medicinal chemistry and green chemistry.
PSO6	Carry out experiments in the area of organic analysis, estimation, separation, derivative process, inorganic semi micro analysis, preparation, conductometric and potentiometric analysis

Course outcome

Organic chemistry-I

CSO-1	Learns the fundamentals of reaction mechanisms
CSO-2	Understands the mechanism of nucleophilic substitution and elimination reactions
CSO-3	Appreciates the fundamentals of aromaticity in organic chemistry
CSO-4	Acquires the 3-D aspects of organic molecules.
CSO-5	Gains the potential about complex vitamin and nucleic acid structure

Inorganic chemistry-I

CSO-1	Understands the background of bonding forces
CSO-2	Appreciates the importance of various theories in bonding
CSO-3	Learns the chemistry basis of solid state
CSO-4	Gains the imagination of 3D structures of silicates and caged compounds
CSO-5	Estimates the importance of extractive metallurgy

Physical chemistry-I

CSO-1	Understands the various theories of electrolytic conductance
CSO-2	Recognizes the dynamics of electrode reaction
CSO-3	Learns the classical status of thermodynamics
CSO-4	Appreciates the fundamentals of molecular thermodynamics
CSO-5	Estimates the basis of chemical surfaces

Instrumental method of analysis

CSO-1	Analysis the variations of practical errors
CSO-2	Gains the potential about different precipitation processes
CSO-3	Determines the procedure for electro analytical techniques
CSO-4	Determines the procedure for thermo analytical techniques
CSO-5	Validates the strength of spectro analytical techniques

Inorganic practical-I

CSO-1	Determines the procedure for semi micro analysis of inorganic salt mixture
CSO-2	Understanding the procedure for semi micro qualitative analysis
CSO-3	Estimates the accurate analytical procedure of analysis
CSO-4	Appreciates the procedure for inorganic analysis
CSO-5	Learns the steps involved in the complex formation process

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CSO-1	Understands the various source for collection of raw materials
CSO-2	Gains the importance about manufacturing process
CSO-3	Determines the necessity for small scale industries
CSO-4	Learns socio impact of sugar and agro chemicals
CSO-5	Validates the cause, consequence and control of pollution

Organic chemistry-II

CSO-1	Understands the basis of redox reaction
CSO-2	Appreciates the various steps involved in the molecular rearrangements
CSO-3	Visualizes the aromatic electrophilic substitution mechanism
CSO-4	Analyses the cruciality of the stereochemical process
CSO-5	Perceives the concept of conformational analysis

Inorganic chemistry-II

CSO-1	Learns the structure and properties of coordination compounds
CSO-2	Analyses the reaction pathways of complex formation
CSO-3	Validates the role of bioinorganic chemistry in every day action
CSO-4	Appreciates the vibrant role of catalysts in chemical reaction
CSO-5	Visualizes the energy behind the nuclear reaction

Physical chemistry-II

CSO-1	Learns the importance of chemical reaction against time
CSO-2	Validates the theoretical background of rotational spectra
CSO-3	Analyses the physical approach of IR and Raman spectra
CSO-4	Gains knowledge about NQR and ESR spectra
CSO-5	Encompasses the symmetrical utility of molecules

Organic practical-I

CSO-1	Learns principle of organic estimation
CSO-2	Gains the procedure for organic separation and derivation
CSO-3	Understands the method of organic preparation
CSO-4	Develops the various routes for recrystallization
CSO-5	Identifies the way for identification of components

Polymer chemistry

CSO-1	Understands the classification of polymers
CSO-2	Learns the chemical background of individual polymers
CSO-3	Determines the various uses of polymers
CSO-4	Analyses the different types of polymerization process
CSO-5	Visualizes the methods of polymer degradation

Green chemistry

CSO-1	Learns basis of green chemistry
CSO-2	Understands principles of green chemistry
CSO-3	Appreciates the importance of solvent free synthesis
CSO-4	Gains knowledge about molecular designing
CSO-5	Validates the adverse effect of chemicals on environment

Organic chemistry- III

CSO-1	Understands the importance of photochemistry
CSO-2	Analyses the chemical structure using UV, IR and mass spectra
CSO-3	Determines the chemical environment ^1H and ^{13}C NMR spectra
CSO-4	Gains the potential of organic reactants
CSO-5	Determines the complex structure of steroids

Inorganic chemistry- III

CSO-1	Determines the structure of complex using electronic spectra
CSO-2	Employs the IR, Raman and Mass bauer analytical tools for structural elucidation
CSO-3	Understands the magnetic properties by NMR and ESR spectra
CSO-4	Enlights the knowledge about inner transition compounds
CSO-5	Validates the inorganic molecular rearrangements

Physical chemistry- III

CSO-1	Gains the potential about photo and radiation chemistry
CSO-2	Understands the importance of quantitative mechanics in electron filling
CSO-3	Perceives the postulates of quantum chemistry
CSO-4	Applies the wave mechanics for for determining atom structure
CSO-5	Visualizes the macro molecular structure

Physical chemistry practical- I

CSO-1	Gains the procedure for conductometric determination
CSO-2	Learns holistic method of surface adsorption
CSO-3	Experiments the kinetics of chemical reaction
CSO-4	Appreciates the importance of potentiometric methods
CSO-5	Understands the sensitivity of pH metric titration

Corrosion chemistry

CSO-1	Gains the knowledge about corrosion
CSO-2	Analyses the importance of various factors on corrosion kinetics
CSO-3	Understands the energy conversion in an electrochemical cell
CSO-4	Appreciates the importance of energy storage devices
CSO-5	Validates the potential of fuel cells as energy storage devices

Pharmaceutical chemistry

CSO-1	Gains the importance of medicinal chemistry
CSO-2	Appreciates the role of antibiotics in everyday life
CSO-3	Acquires the usage of therapeutic agents
CSO-4	Validates the crucial role of therapeutic agents
CSO-5	Analyses the vibrant role of pharma chemistry

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CSO-1	Gains hands on various analytical instruments (research)
CSO-2	Learns the steps involved in solving a problem
CSO-3	Understands the formatting of table work
CSO-4	Enters in the first step of research aptitude
CSO-5	Visualizes the steps of project work presentation