DEPARTMENT OF CHEMISTRY

PROGRAM OUTCOMES:

B.Sc. CHEMISTRY

Programme Outcomes (POs)	
PO1	Enrichment of knowledge through the basic concept of Chemistry.
PO2	To Know the details of Basic concept and Various principles of chemistry and it will apply for the experiments.
PO3	Students will acquire core competency in the subject Chemistry, and in allied subject areas.
PO4	Students will be able to use the evidence-based comparative chemistry approach to explain chemical synthesis and analysis.
PO5	Students will be able to characterize, identify and separate components of organic or inorganic origin and will also be able to analyze them by making use of the modern instrumental methods learned.
PO6	Students will be able to understand the basic principle of equipment and instruments used in the chemistry laboratory

Programme Specific Outcomes (PSOs)	
At the end of the programme, the students will be able to:	
PSO	1. Provide in-depth knowledge of scientific and technological aspects of Chemistry 2. Familiarize with current and recent developments in Chemistry 3. Enrich knowledge through programmes such as industrial visits, projects etc. 4. Train students in skills related to Chemistry for academic and industrial requirement. 5. Create foundation for research and development in Chemistry 6. The students will have sound understanding of fundamental and application-based principles and theories in Physical, Inorganic, Organic and Analytical Chemistry 7. Students will learn various techniques to perform scientific experiments as well as accurately record and analyse the results of such experiments 8. Student will learn the usage of analytical instruments, select, and apply appropriate techniques and resources for the analysis 9. Extensive laboratory and classroom work will skill the students with in problem solving, critical thinking and analytical reasoning as applied to scientific problems 10. Students will understand the applications and impact of the chemistry in societal, and environmental contexts, and demonstrate its knowledge and need for sustainable development 11. Students will learn to apply ethical practices such as limited and safe use of hazardous chemicals, responsibility toward environmental and health safety 12. Students will be able to work in team and thus get prepared as a perfect professional chemist with respect to knowledge, responsibility and teamwork

Course Outcomes B.Sc. Chemistry Semester I	
At the end of the programme, the students will be able to:	
USCH101	1. learner understand the basic concepts of system, surrounding, thermodynamic properties, functions, law of thermodynamics and introduction of thermochemistry. 2. Learner will be able to predict the position of equilibrium in common chemical reactions 3. Learner will be able to understand the different atomic theories, electronic configuration and its applications 4. Learner will be able to understand the principles of periodicity of properties of elements. 5. Learner will be able to Classify and name common organic compounds according to IUPAC system. 6. Learner will be able to predict bonding, hybridization and structure of organic compounds. 7. Learner will be able to understand the mechanism of common organic reactions.
USCH102	1. Learner will be able to understand the concept of chemical kinetics, rate of chemical reaction and factors affecting it. 2. Learner will be able to calculate order of reaction and different methods of determination of orders of reaction. 3. Learner will be able to identify the states of matter and difference between the various properties of matter such as surface tension, viscosity, refractive index and polarizability. 4. Learners will able to understand the importance of comparative chemistry of main group elements by studying their metallic and non-metallic nature, oxidation states, electronegativity, anomalous behaviour of second period elements 5. Students will able to predict stereochemical outcomes of common organic reactions. 6. Learners will be able to distinguish and draw different molecular projections and to interconvert them. 7. Learners able to identify and assign stereo descriptors using CIP rules. 8. Learners able to understand the conformers of alkanes and their relative stabilities.
Course Outcomes B.Sc. Chemistry Semester II	
At the end of the programme, the students will be able to:	
USCH201	1. Students will be able to recapitulate the basic concepts such as gas laws, kinetic theory of gases. 2. Students able to learn about the deviation of real gases from ideal behaviour, compressibility factor, Van der waal equation, etc. 3. Students able to learn about reversible and irreversible reactions, dynamic equilibria and equilibrium constant (Kp and Kc), their relation. 4. Learner able to understand electrochemistry concepts 5. Student will able to learn about various concept and theories of acid-base concepts. 6. learner to deal with quantitative aspects of chemistry. 7. Students will able to learn about the carbon-carbon sigma and pi bond.
USCH202	1. Students will know the Henderson equation of acid and base. 2. Students understand the concept of pH and buffers. 3. Students get information of the electromagnetic radiation, type of spectroscopy, region of electromagnetic radiation and application of different spectroscopic techniques. 4. To learn about oxidation number and oxidation state of different elements and also study about balancing redox reactions. 5. To understand the concept of concept of stability and predicting reaction mechanism 6. Learners would be able to write the mechanism of electrophilic aromatic substitution and understand Hammond's postulates.

Course Outcomes B.Sc. Chemistry Semester III	
At the end of the programme, the students will be able to:	
USCH301	1. Student able to understand the concept of free energy, derive and apply the Helmholtz and van't Hoff's equations to different thermodynamic systems. 2. To learn concept of open system, partial molal properties, chemical potential, fugacity and activity. 3. Student should be able to- define basic terms related to electrolyte conductivity, predict how the conductivity of an electrolyte depends on the electrolyte concentration, learn what are industrial applications of conductivity measurements 4. The students will understand the fundamentals of Chemical Bonding's, various types of chemical bonds and their nature. 5. The students will also learn the concepts of Molecular Orbital Theory of different types of molecules. 6. The students will be able to explain the properties and reactivity of Alcohols and Phenols. 7. The students will be able to understand the concept of epoxides and their ring opening reactions.
USCH302	1. Student should be able to recall the terms concentration, temperature, medium and the presence of a catalyst will affect the speed of a chemical change, 2. Understand the basic laws of kinetic and be able to perform calculations using them. 3. Students will able to construct P-x-y, T-x-y diagrams for ideal and non- ideal binary miscible liquid-liquid systems. 4. The student will able to describe salient features of liquid-liquid phase equilibrium plots. 5. The student will understand the basics of various distillation processes. 6. learner will able to understand the knowledge of compounds of p block elements like compounds of silicon, Germanium and Nitrogen 7. Learner will be able to understand the nomenclature of carbonyl compounds. 8. Learner will understand. the mechanism of nucleophilic addition reactions of carbonyl compounds.
USCH303	1. Learner will have complete holistic knowledge about the subject of analytical chemistry which is a new subject to them. 2. learner will able to learn about the preparative step of sampling required for analysis CO_3 3. Learner will get a complete theoretical knowledge about the classical methods such as gravimetric and titrimetric analysis. 4. Learner will get a complete idea about the principle involved in spectroscopic analysis. 5. Learner will be able to theory behind the absorption and emission spectroscopy to understand the working of the instrument and to operate the instrument in his future career.
Course Outcomes B.Sc. Chemistry Semester IV	
At the end of the programme, the students will be able to:	
USCH401	1. Student should be able to evaluate fundamentals of electrochemistry, evaluate electrodes and cells, discuss electrode potentials and cell thermodynamics. 2. Student should be able to explain the basic definitions and terms in a phase diagram and phase rule concepts, learn applications of phase rule to different systems 3. The students will understand the concepts of Co-ordination Compounds, ligands and their types, structures and geometries of coordination compounds, Werner's theory of coordination compounds. 4. The students will learn the fundamentals, concepts, nature, periodic properties, the properties of different compounds in the course Comparative Study of Transition (p-block) Elements. 5. The learner will be able to understand nomenclature, structure and properties of Carboxylic acids and sulfonic acids.

USCH402	1. Students will be able to define terms such as crystal, crystal lattice and unit cell 2. Students will understand diffraction of waves by crystals and Bragg's law, determination of interplanar distance by XRD 3. Students will be able to understand different types of catalysts, their mode of action, advantages and disadvantages, as well as their principal applications, 4. Learner will understand the while studying the environmental aspect of oxides and oxoacids of nitrogen, Sulphur and phosphorus. 5. The learner will be able to understand the nomenclature and basicity of Amines and electrophilic substitution reactions in Aromatic Amines. 6. The learner will be able to clarify structure, aromaticity, synthesis and reactivity of 5-and 6-membered Heterocyclic compounds.
USCH403	1. Learner will get well versed with the various analytical separation used as a preparative step for analysis in a small and large scale. 2. Learner will understand the various types of separation methods based on solubility, gravity, volatility, electrical effects, their principles and industrial applications 3. Learner will get the information about solvent extraction separation methods used in industries as well as small scale separation with principles. 4. Learners will also aware about chromatography separation techniques can be used on small quantities 5. Students will be able to understand the electroanalytical techniques such as Potentiometry, conductometry and pH-metry will help them to understand titrations without indicators using instruments done in an accurate manner 6. Learner will get the complete idea about statistical treatment of analytical data used for quality control in industry.

Course Outcomes B.Sc. Chemistry Semester V	
At the end of the programme, the students will be able to:	
USCH501 Physical Chemistry	1. Memorize concept of dipole moment, polar and non- polar molecules. 2. Differentiate Rotational Spectroscopy Vibrational Spectroscopy Raman Spectroscopy. 3. Understand Raoult's law, Clapeyron equation, van't Hoff Factor. 4. Create own model to show osmosis and reverse osmosis. 5. Define basic terms of radioactivity i.e. decay constant, half life time, average life and units of radioactivity. 6. Compare G.M. Counter and Scintillation Counter method for detection of radioactivity. 7. Apply Carbon Dating method to estimate age of fossils of plants and animals. 8. Apply how the BET equation can be used to determine the surface area of an adsorbent
USCH502 Inorganic Chemistry	1. Describe molecular symmetry and concept of point group. 2. Appreciate importance of symmetry in chemistry; 3. Calculate the packing density of different types of cubic unit cells 4. Describe the imperfections in solids and their effect on properties 5. Explain consequences of Frenkel and Schottky defects and differentiate them. 6. Explain the terms superconductivity, transition temperature and Meissner effect. 7. Explain different types of super conductors 8. Give application of superconductors

USCH503 Organic Chemistry	1. Students will able to distinguish between stereoselectivity and stereospecificity. 2. Students will learn stereochemistry of substitution reaction, elimination and addition reaction. 3. Writing the mechanism of molecular rearrangements with example and stereochemistry. 4. Writing the structures of carbohydrates in Fisher projection and Haworth formula and its interconversion. 5. Students will be able to solve problems of structure elucidation of simple organic compounds using UV-Visible, IR, NMR and Mass technique. Students will learn to calculate index of hydrogen deficiency in given molecular formula. 6. Explanation and drawing of structures of DNA and RNA including base pairing. 7. Students will understand the functional group transformation and selectivity of reagents like $LiAlH_4$, Red Al, $NaBH_4$, SeO_2, m-CPBA and NBS 8. Students will learn different types of addition & condensation polymers, their preparations and uses
USCH504 Analytical Chemistry	1. Students will learn importance of quality concept in industry, different grade chemicals and scientific techniques of sampling. 2. Students will understand theoretical aspects of types of chemical titrations. 3. Student get acquainted with different measurements techniques based on various spectroscopic techniques. 4. Students will learn modern and sophisticated separation techniques
USCHP05 + USCHP06 Practical Course	1. Understanding relevant concepts. 2. Planning of the experiments 3. Layout and adjustments of the equipment's 4. Recording of observations and plotting of graphs. 5. Calculation of results and estimation of possible errors in the observation of results.
~~**USACHFC501 Heavy and Fine Chemicals**~~	~~Expected learning outcomes~~ ~~1. The understand the basic concept of pump and it helps in the operation.~~ ~~2. To understand the various solvents grades it helps to choose the solvent in the experiments.~~

Course Outcomes B.Sc. Chemistry Semester VI	
At the end of the programme, the students will be able to:	
USCH601 Physical Chemistry	1. Recall the concept Ionic Strength, activity and activity Coefficient. 2. Differentiate between Concentration cell and chemical cell. 3. Apply Nernst equation for numerical solving. 4. Set up an experiment to show decomposition potential and overvoltage 5. Understand Nuclear Spin, Nuclear magnetic moment, Spin angular moment 6. Draw the diagram of NMR Spectrometer. 7. Know the principle of ESR Spectroscopy. 8. Apply principle NMR and ESR for Numerical solving.
USCH601 Physical Chemistry Practical	1. Handle and Understand principles of different instruments like Colorimetry, Potentiometry, Conductometry. 2. Determine molecular weight of any high polymer polyvinyl alcohols by viscosity measurement. 3. Interpret the order of reaction graphically from given experimental data and to calculate the specific rate constant.

USCH602 Inorganic Chemistry	1. Explain merits and Limitations of Valence Bond Theory. 2. Explain the shapes of d- orbitals 3. Explain Consequences of crystal field splitting on various properties of metal complexes of the first transition series. 4. Explain Limitations of CFT; 5. Correlate electronic configurations and lability of complexes. 6. Explain Ligand substitution reactions considering Associative and Dissociative mechanisms. 7. Appreciate rules for determination of ground state term. 8. Determine Terms for p^2 and d^1 electronic configurations
USCH603 Organic Chemistry	1. Students will able to distinguish between stereoselectivity and stereospecificity. 2. Students will learn stereochemistry of substitution reaction, elimination and addition reaction. 3. Writing the mechanism of molecular rearrangements with example and stereochemistry. 4. Writing the structures of carbohydrates in Fiser projection and Haworth formula and its interconversion. 5. Students will be able to solve problems of structure elucidation of simple organic compounds using UV-Visible, IR, NMR and Mass technique. Students will learn to calculate index of hydrogen deficiency in given molecular formula. 6. Explanation and drawing of structures of DNA and RNA including base pairing. 7. Students will understand the functional group transformation and selectivity of reagents like $LiAlH_4$, Red Al, $NaBH_4$, SeO_2, m-CPBA and NBS. 8. Students will learn different types of addition & condensation polymers, their preparations and uses.
USCH603 Organic Chemistry Practical	1. Students will able to identify chemical type of component present in binary mixture. 2. Students will develop basic skill in the separation technique of solid-liquid and liquid-liquid mixture. 3. Students will learn to separate the mixture into components by fractional distillation. 4. Competency in handling and performing fractional distillation. 5. These practicals enable the student to identify unknown organic compound by microscale technique. 6. Students will get training of systematic qualitative analysis of organic compound.
USCH604 Analytical Chemistry	1. Students will understand basic principles and applications of electroanalytical techniques. 2. Students will learn principle of different separation techniques 3. Students will appreciate different aspects of food processing and cosmetics industry and the analysis 4. Students will get familiar with various thermal methods of analysis and various method validation parameters and their importance.
USCH604 Analytical Chemistry Practical	1. Students will get hands on practice of various techniques of quantitative estimation. 2. Students will get an opportunity to handle and understand principles of different instruments such as colorimeter, spectrophotometer, pH meter, flame photometer and turbidimeter 3. Students will come across with different types of samples such as cosmetics, polluted water, fertilizer, food, chemicals etc. and their analysis

M.Sc. Organic Chemistry) Course Outcome:

Course Outcomes M.Sc. Organic Chemistry	
Course Code: PSCH101 Physical Chemistry	**Chemical Kinetics** • To acquire in depth knowledge about theories of chemical kinetics and to calculate specific rate, activation energy and frequency factor. • To calculate Michaelis Menten constant for enzyme – substrate binding by Linewearver Burk plot. To analyze kinds of radiation utilised in several fields of research and industry • To gain knowledge about kinetics of complex reactions and fast reactions • To distinguish various adsorption isotherms and heterogeneous catalyst reactions
	Quantum Chemistry and Group Theory • To analyze the need for quantum mechanics, relate quantum mechanical operators toobservablesandtheuseofoperatoralgebratosolvesimpleeigenvalueequations, relate molecular phenomena viz translational, rotational and vibrational motion to model systems and solve Schrodinger equation to arrive at the eigenvalues. • To derive eigen values and wave functions of H and He atom using approximation methods. Concept of anti-symmetric wave function and solve Hartree and Hartree Fock equation for helium atom • To apply Molecular orbital and valence bond treatment to simple homonuclear diatomic molecules- H2 + & H2 , MOT of higher diatomic molecules, HMO treatment of simple conjugated systems • To distinguish molecular and crystallographic symmetry, apply multi symmetry operations to derive character tables • To gain knowledge of symmetry based selection rules for vibrational and electronic spectroscopy and predict the spectra of molecules
	Thermodynamics and Electrochemistry • To gain knowledge on basic concepts of ensembles, statistical probabilities in the filling of atomic and molecular energy levels, partition functions and their derivation. • To acquire skill to relate molecular partition functions with thermodynamic and kinetic parameters and derive mathematical expressions • To analyze and apply concepts of partition function to heat capacities of solids and gases, black body radiation, electron gas in metals. • To familiarize the concepts of ion-ion interactions, ion solvent interactions, calculations of ionic activity and ionic strength • To derive mathematical expressions for electro capillary, single and multi-step electrodics and exchange current density.
Course Code: PSCHP101 Physical Chemistry Practical	**Physical Chemistry Practical** • To determine the order and calculate the rate constant for the reaction • To draw and interpret the phase diagram of two component systems • To apply distribution law to find the partition coefficient and equilibrium constant. • To verify Freundlich adsorption isotherm.

Course Code: PSCH102 Inorganic Chemistry	**Coordination Chemistry** • To discuss about the theories of bonding in coordination complexes • To evaluate about the formation, reaction mechanism stability constant, and the various methods of determination of stability constant and the stereochemistry of the inorganic complexes. • To explain the electronic and magnetic properties. • To outline the mechanism of electron transfer reactions and Marcus Hush theory • To predict the substitution reaction of complexes • To explain the inorganic cages, clusters an rings which are very much useful for leading current research area of materials science Course Title: Analytical Chemistry • To build a better understanding of "Analytical Chemistry"; to evolve proper analytical data and practice to report the results with uncertainty component. • To explore the analysis of complex chemical materials/ manufactured chemical matrices very systematically with suitable analytical methods. • To demonstrate the instrumental based chemical analysis in all the arena of chemical processes and products through separations, quantifications and structural determination of chemicals • To establish the competency of chemical analysis in the applied research, chemical processes and testing/quality control laboratories with regulatory compliances. • To design new analytical routes for the day to day evolution of newly discovered chemical products and invent the characters of chemicals.
	Organometallics and Bioinorganic Chemistry • To understand the structure, bonding, preparation and reactivity of organometallic compounds. Students will learn about synthetically useful transformations including oxidations, reductions, organometallic reactions, and reactions of electron deficient species. The emphasis will be on developing a mechanistic understanding of selectivity and synthetic strategy. • To gain information on the mechanism of the catalytic processes of organometallic complexes that is useful for the current synthetic organic chemistry field. • To understand elaborately on the content of biological inorganic processes that helps the students in the future research of biomimetic and computational chemistry. • To gain complete knowledge on the oxygen carriers and iron sulphur proteins and able to Explain how metal ions take part in biological system and their physiological effect on biological system. • To comprehend photosynthesis and photosystem1 & photosystem2, vitamin B12 model system and their reaction Course Title: Chemistry of aromatic Compounds and Concerted Reactions • To use oxidation and reduction reagent for preparing a new synthetic compound. • To apply the concept of aromaticity to identify aromatic, anti-aromatic and non -aromatic compounds. • To apply logically the concept of direction for both electrophilic and nucleophilic reactions in aromatic compounds. • To identify the different types of rearrangement reactions and predict the mechanisms involved • To use the Woodward-Hoffmann rule to predict the stereochemistry of product under thermal and photochemical conditions for different types of pericyclic reaction Course Title: Organic Chemistry Practical • To get hands-on experience in the separation of two component mixture, purification and identification of the functional groups present.

	• To Expertise in various preparatory methods of organic compounds by single and double stage methods • To use various purification techniques and extraction methods involving natural products.
	Solid State and Nano Chemistry • To explain the complete description of chemistry behind the solids; learnt the preparation, characterization of solids and describe the principles concerning solid state structures • To predict the advances in solar energy harvesting materials for fabrication of alternate energy materials • To develop magnetic materials and superconducting materials for advanced material fabrications • To relate diffraction intensities mathematically to structural parameters and derive extinction conditions • To describe specific crystal structures by applying basic crystallographic concepts and describe the experimental use of the diffraction phenomenon and give an account of the generation of X-ray radiation and its effects of on matter
Course Code: PSCHP102 Inorganic Chemistry Practical	**Inorganic Chemistry Practical** • To Train the students in a semi-micro qualitative analysis of inorganic mixture and help the students excel in the R&D laboratories. • Explore their knowledge in the volumetric analysis of metal ions. • Basic exposure to prepare the pure metal complexes • Makes awareness to separate the metal ions through chromatography techniques
Course Code: PSCH103 Organic Chemistry	**Stereochemistry and Reaction Mechanism** • To Identify the absolute configuration of molecules – D/L, R/S, erythro/threo, meso/dl,EZ, Pro R, Pro S, Re and surface. • To apply the concept of conformational analysis for cyclic and acyclic acyclic systems. • To determine the reaction mechanism by kinetic andnon-kinetic Methods, mechanism and applications of aliphatic nucleophilic substitution reactions. • To get a detailed picture of electrophilic, nucleophilic and free radical addition reaction mechanisms with stereo chemical aspects. Mechanism of carbene, nitrene intermediates and application in name reactions. • To explain the reaction mechanism and stereochemistry of E1, E2 and E1CB and to predict it regioselectivity.
Course Code: PSCH104 Analytical Chemistry	Electro Analytical Practical • To explain the principle of conductivity, potentiometry and colorimetry experiments. • To determine the strength of unknown solutions by potentiometric and conduct metric methods. • To determine the strength of unknown solutions by colorimetric

Course Code: PSCHP104 Analytical Chemistry Practical	Analytical Chemistry Practical • To imbibe the techniques of analysis of complex chemical materials • To quantitative estimation of organic compounds and inorganic metal ions • To interpret all spectro-analytical data for molecular identification

Course Code: PSCHO303 Natural products and Spectroscopy	**Chemistry of Natural Products** • To explain the fundamental concept of nucleic acids and its functioning. • To propose the total synthesis of peptide and to elucidate the structure of various steroids. • To write the synthesis of camphor α, β- carotenoids and lycopene. • To outline the synthesis of complex organic compounds like morphine cocaine reserpine and synthesis of flavones iso flavones and anthocyanin. • To gain expertise in the bio synthesis of cholesterol terpenoids alkaloids amino acids and bile acid. • To explain the fundamental concept of nucleic acids and its functioning. • To propose the total synthesis of peptide and to elucidate the structure of various steroids. • To write the synthesis of camphor α, β- carotenoids and lycopene. • To outline the synthesis of complex organic compounds like morphine cocaine reserpine and synthesis of flavones iso flavones and anthocyanin. • To gain expertise in the bio synthesis of cholesterol terpenoids alkaloids amino acids and bile acid.
Course Code: PSCHO301 Theoretical organic chemistry-I	**Spectroscopy – I** • To acquire knowledge about the principle of micro wave, Infrared spectroscopy , FTIR and IR spectra of poly atomic molecules • To predict the structure of organic compounds and interpret spectrum of a molecule from its IR data and Raman spectra to organometallic compounds and simple inorganic compounds • To learn about UV-Visible spectroscopy and apply the knowledge gained to Calculate λ max values for a molecule • To predict the term symbols, interpret the Orgel diagram, Tanabe-Sugano diagram, electronic spectra of inorganic and organometaliic organometallic compounds. • To apply the concept of PES, UPS , ESCA , Auger spectroscopy and NQR in the study of surface characterisation of Inorganic compounds
	Synthetic Methodology • To apply the retrosynthetic approach to develop methodology for synthesizing new compounds involving C-C and C=C. • To logically approach the usage of various reagents for organic synthesis • To apply the methodology involved in advanced name reactions for synthesizing new compounds • To approach synthesis of complex organic compounds in a logical manner. • To apply green chemistry principle for synthesis of organic compounds
	Photochemistry

	• To explain the fundamentals of photochemistry, Absorption and Emission of radiation, Stern Volmer analysis. Quantum efficiency and Molecular structure and photo physical and photo chemical reactivity . • To demonstrate the fast reaction techniques such as flash photolysis and fluorescence and life time measurements • To discuss about Photo chemistry of ketones, Norrish Type-I, Norrish type –II reactions, Photochemistry of olefins, Paterno – -Buchi reaction and synthesis of Vitamin D. • To explain the various types of inorganic photochemical reactions, mechanism of solar energy conversion using ruthenium bipyryidyl complexes • To revive about solar spectrum, Photo chemistry of vision, photocatalysis and photodynamic therapy.
Course Code: PSCHO401 Theoretical Organic Chemistry-II	**Spectroscopy II** • To explain the bonding properties related structural identification of coordination complexes. • To compute magnetic properties based structural determination coordination complexes and some specific inorganic elements. • To discuss principle, instrumentation of Electron Spin Resonance spectroscopy and its applications and application of free electron character available in a molecular entity to predict structure of complexes. • To explain the surface characterization of inorganic compounds • To discuss the principles, chemical shifts, coupling constants, and application of iH, 19F, 31Pand solid state NMR spectroscopy. • To discuss the Principles and instrumentation of different types of mass spectrometer. • To Outline Salient features of fragmentation pattern of organic compounds.
Course Code: PSCHP104 Analytical Chemistry Practical	**Analytical Chemistry Practical** • To imbibe the techniques of analysis of complex chemical materials • To quantitative estimation of organic compounds and inorganic metal ions • To interpret all spectro-analytical data for molecular identification