

Department Of Chemistry

Programme Outcome: A graduate student is expected to be capable of demonstrating comprehensive understanding of both theoretical and practical knowledge in all disciplines of Chemistry. Students can solve their subjective problems very methodically, independently and finally draw a logical conclusion. Students will employ critical thinking and the scientific method to design, carry out, record and analyze the results of chemical experiments and get an awareness of the impact of chemistry on the environment, society, and other cultures outside the scientific community. Further, the student will be capable of applying modern technologies, handling advanced instruments and Chemistry related soft-wares for chemical analysis, characterization of materials and in separation technology.

Programme specific outcomes:

By the end of the course, the students will be able to

- ❖ Join school as a Chemistry teacher.
- ❖ Prepare for competitive exams like IIT-JAM, CUET, GATE, and state level CPGET.
- ❖ Analyze and grasp abstract ideas to apply them to important practical problems.
- ❖ Develop strong analytical skills and a broad-based background in the Chemical sciences
- ❖ To join the Indian pharmaceutical industry.

Course Outcomes:

S. No.	Semester	Course	Credits	Course Outcomes
1	I	Chemistry – I	05	<p>By the end of this course, Students will be able to:</p> <ul style="list-style-type: none">❖ Inculcate industrial applications of carbides, silicones, acidity and reactivity of boran compounds.❖ Detail understanding of various compounds of elements of p-block and theoretical knowledge to perform semi micro analysis i.e Identification of inorganic salts.❖ Understand the concept and theories of chemical bonding.❖ These topics provide excellent understanding of basic knowledge of organic chemistry in future of course❖ Understand alkanes, alkenes. Understand the aromaticity of organic compounds..❖ These topics give a foundation to cater the needs of quantum mechanics future of course and use full to learn behaviour of real gases, liquification phenomenon, viscosity of liquids etc.
2	II	Chemistry – II	05	<p>By the end of this course, Students will be able to:</p> <ul style="list-style-type: none">❖ Understand reactivity and structures of oxides, oxy acids, structures of inter halogen compound. zero group elements and d-block elements.❖ Understand the concept structure and bonding in organic compounds.❖ Understand the concept of stereochemistry.❖ Understand different types of reaction mechanism.❖ Understanding the crystal structures, solutions, colligative properties❖ Understand the quantitative analysis (volumetric analysis) and gravimetric analysis❖ Practical knowledge on the complexometric titrations

3	III	Chemistry – III	05	<p>By the end of this course, Students will be able to:</p> <ul style="list-style-type: none"> ❖ Understand the chemistry of coordination compounds and Hard and Soft acids and bases. ❖ Establishing the concept of organometallics and metal carbonyls. ❖ Understand the structure and chemical bonding in aryl, alkyl halides, aldehydes. ❖ Understand the structure and chemical bonding in alcohols and phenols.. ❖ Understand chemical reactions of acids, alcohols, phenols etc. ❖ Understand the phase rule and phase diagrams. ❖ Understand the stereo chemistry of carbon compounds. Its importance in research field. Importance of nano materials in medical and industrial field. ❖ Practical knowledge on preparations of different organic molecules
4	IV	Chemistry – IV	05	<p>By the end of this course, Students will be able to:</p> <ul style="list-style-type: none"> ❖ Understand the chemistry complex compounds, Hard and Soft acids and bases. ❖ Understanding the concept of bio inorganic chemistry ❖ Understand the chemistry Aminoacids, carbohydrates and heterocyclic compounds ❖ Understand the rate, order, molecularity and half life of zero, first and second order reactions chemical kinetics ❖ Understand the concept of colloidal science. ❖ Knowledge on Carbanions and their named reactions with mechanism ❖ Understanding the concept of metallic bonding ❖ Practical knowledge on flame test, solubility test, functional group identification test and derivatives preparation in analyzing the unknown organic compounds

5	V	Chemistry – V	05	<p>By the end of this course, Students will be able to:</p> <ul style="list-style-type: none"> ❖ Understand the spectroscopic techniques in elucidation of the given compound. Gains the knowledge of I.R, U.V and Electronic spectral techniques. ❖ Students gain knowledge on basics of NMR and Mass Spectroscopic techniques which helps in interpretation of unknown organic compounds. ❖ Students are able to Prepare TLC plates and check purity of a few organic compounds through T.L.C. ❖ Knowledge on various separation techniques like Solvent extraction, TLC, PC, CC, HPLC and GC is gained and the techniques are understood in detail. ❖ Practical knowledge on solvent extraction, calorimetry, stigmometer and Chemical adsorption is imparted to the students
6	VI	Chemistry –VI	05	<p>By the end of this course, Students will be able to:</p> <ul style="list-style-type: none"> ❖ Understand the various types of diseases and various terms involved in medicinal chemistry. Nomenclature of drugs and therapeutic activity of drugs. absorption , distribution, metabolism and elimination of drugs. ❖ Understand the chemistry of enzymes and their action, drug action –receptor theory , drug function with an example. ❖ Understand the synthesis of drugs and about the drugs to treat metabolic disorders. And those drugs which acting on nervous system ❖ Understand about molecular messenger and health promoting drugs in detail. ❖ Students are able to perform practicals of various physical chemistry like pH meter, conductivity meter and potentiometer experiments and gain the sound knowledge of their significance.