

Department of Chemistry Program Outcome:

- ❖ Students will demonstrate an understanding of major concepts in all disciplines of chemistry.
- ❖ 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.

Program specific out comes

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

- ❖ Join school as Chemistry teacher.
- ❖ Prepare for competitive exams like MPSC, UPSC, GATE, CAT.
- ❖ 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 industry

S. No	Semester	Course	Credits	Course outcome
1	I Paper-I	Chemistry-I	5	<p>By the end of this course, Students will be able to:</p> <ol style="list-style-type: none"> 1. Inculcate industrial applications of carbides, silicones, acidity and reactivity of boron compounds. 2. Detail understanding of various compounds of elements of p-block and theoretical knowledge to perform semi micro analysis i.e. Identification of inorganic salts. 3. Understand the concept nature of chemical bond. 4. Overview of periodic table and S,P block elements 5. These topics provide excellent understanding of basic knowledge of organic chemistry in future of course. 6. These topics give a foundation to cater the needs of quantum mechanics future of course and use full to learn behavior of real gases, liquification phenomenon, viscosity of liquids etc.
2	II Paper- II	Chemistry-II	5	<p>By the end of this course, Students will be able to:</p> <ol style="list-style-type: none"> 1. Understand reactivity and structures of oxides, oxy acids, structures of inter halogen compound. zero group elements and d-block elements. 2. Understand the concept structure and bonding in organic compounds. 3. Understand the concept of stereochemistry. Understand different types of reaction mechanism. 4. Understand alkanes, alkenes. Understand the aromaticity of organic compounds. 5. Understand the crystal structures, solutions colligative properties Certain physical techniques such as steam and fractional distillation methods. separation techniques based on Nernst law. 6. Understand the quantitative analysis (volumetric analysis) and gravimetric analysis 7. Inculcates the practical knowledge of identification and confirm the given unknown salt mixture.

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3	III Paper-III	Chemistry-III	5	<ol style="list-style-type: none"> 1. Understand the chemistry of F-block and non-aqueous solvents. and symmetry of the compounds. 2. Understand the structure and chemical bonding in aryl, alkyl halides, aldehydes. 3. Understand the structure and chemical bonding in alcohols and phenols. 4. Understand chemical reactions of acids, alcohols, phenols etc. 5. Understand the phase rule and phase diagram. Surface chemistry and adsorption, their importance in industry 6. Understand the stereo chemistry of carbon compounds. Its importance in research field. Importance of nano materials in medical and industrial field. 7. Volumetric analysis, and gravimetric analysis. estimation of carbonate, bicarbonate, copper etc.
4	IV Paper-IV	Chemistry-IV	5	<ol style="list-style-type: none"> 1. Understand the chemistry complex compounds, metal carbonyls, organometallic compounds and applications. 2. Understand the chemistry of carboxylic acids and their derivatives, active methylene compounds and nitro compounds. industrial and research importance. 3. Understand the electrolytical cells, electrochemical cells applications batteries industry. Conductometric titrations, emf etc. 4. Understand the modern approach of chemistry i.e. pericyclic reactions, strategic synthesis and stereoselectivity and their research applications 5. To estimate the concentrations of given compounds by technical methods, Conductometry and potentiometry.
5	V Paper-V	Chemistry-V	4	<ol style="list-style-type: none"> 1. Understand the CFT, magnetic properties, color properties, applications of complex compounds. 2. Understand the chemistry amines and heterocyclic compounds and their importance medical fields. 3. Understand the thermodynamics of chemical reactions & concept of chemical kinetics.

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6	VI Paper-VI	Chemistry-VI	4	<ol style="list-style-type: none"> 1. Understand the spectroscopic techniques to elucidation of the given compound. Gains the knowledge of I.R, U.V and ELECTRONIC SPECTRAL TECHNIQUES 2. Students are able to Preparation of and checking purity through T.L.C of few organic compounds.
7	VII Paper-VII	Chemistry-VII	4	<ol style="list-style-type: none"> 1. Student able to understand the reaction mechanism of inorganic complexes, inert and labile nature, bio inorganic chemistry i.e. importance of micro and macro nutrients in human. 2. Student able to understand the chemistry and reactions of carbohydrates and amino acids. Their importance in medical and biological fields. 3. Student able to understand the thermo chemical reactions and thermodynamic parameters, spontaneous and non-spontaneous, equilibrium, Cp and Cv, thermodynamically carried processes such as entropy etc., 4. Students are able to identify and confirm the given organic compounds and able to test the purity samples.
8	VIII Paper-VIII	Chemistry-VIII	4	<ol style="list-style-type: none"> 1. 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. 2. Understand the chemistry of enzymes and their action, drug action –receptor theory, drug function with an example. 3. Understand the synthesis of drugs and about the drugs to treat metabolic disorders. And those drugs which acting on nervous system. 4. Understand about molecular messenger and health promoting drugs in detail. 5. Students are able to perform practical's of various physical chemistry experiments and gain the sound knowledge of their significant