

K.T.S.P.Mandal's
Hutatma Rajguru Mahavidyalaya, Rajgurunagar
Annual Report
Department of chemistry 2024-25

Program Outcomes

PO NO	PO Statement After completing the Bachelor of Science Program, students will be able to-	Knowledge and Skill
PO-1	Gain a thorough knowledge and understanding of concepts and principles in Chemistry and other subjects.	Disciplinary knowledge
PO-2	Communicate the subject knowledge in a clear and simple manner in writing and oral.	Communication skill
PO-3	Identify the given problem and apply, theories/assumptions for solving the same related to real life situations	Critical thinking & problem solving
PO-4	Plan, execute, interpret and report the results of the experiments to investigate.	Research related skill
PO-5	Work effectively and respectfully as a team member in the classroom, laboratory and field-based situations	Co-operation /Teamwork
PO-6	Correlate the ideas, evidences and experiences to analyze and interpret the scientific information with learned scientific reasoning	Scientific reasoning
PO-7	Get sensibly aware with the subject facts that can be applied for the society.	Reflective thinking
PO-8	Apply modern library search tools to locate, retrieve, and evaluate subject-related information.	Information /digitally Literacy
PO-9	Identify the subject resources required for a project and manage different projects.	Self-directed learning
PO-10	Motivate and inspire other colleagues/students in the subject-related activities.	Leadership readiness / Qualities
PO-11	Inculcate continuous learning habit through multiple Techniques	Lifelong readiness /qualities

Program Specific Outcomes

PO NO	PSO Statement	Knowledge and Skill
	After completing the Bachelor of Science in Chemistry, students will be able to-	
PSO-1	Demonstrate comprehensive knowledge and understanding of core principles, theories, and concepts in chemistry.	Disciplinary knowledge
PSO-2	Apply critical thinking skills to analyze complex chemical phenomena, evaluate experimental data, and propose innovative solutions to theoretical and practical problems in chemistry	Critical thinking & problem solving
PSO-3	Utilize resources such as textbooks, scientific literature, online courses, and professional networks to pursue self-directed learning and stay abreast of recent advancements in chemistry.	Self-directed learning
PSO-4	Utilize digital tools, software, and databases effectively for literature research, data analysis, simulation, and visualization in chemistry.	Digitally literacy
PSO-5	Exhibit leadership qualities and interpersonal skills essential for collaboration, teamwork, and effective communication within multidisciplinary research teams and professional environments.	Leadership
PSO-6	Demonstrate readiness for professional practice or further education in chemistry by exhibiting qualities such as adaptability, resilience, professionalism, and a commitment to lifelong learning.	Readiness/qualities

Course Outcomes

CHE-101-T: Fundamentals of Chemistry-I

After the completion of this course, student will be able to

CO1: recall the fundamental concepts of the mole concept, atomic structure, organic chemistry, catalysis, and surface chemistry.

CO2: explain the principles of chemical stoichiometry, Hund's rule, Aufbau principle and catalysis.

CO3: utilize the knowledge of the mole concept, atomic structure, factors affecting the reactivity of organic compounds, and surface chemistry.

CO4: apply the principles of the mole concept, atomic structure, organic reactivity, catalysis, and surface chemistry to solve the problems.

CO5: evaluate the solutions based on their concentration, and organic structures based on their reactivity and surface chemistry.

CO6: propose solutions to problems related to organic chemistry reactions, catalysis mechanisms, and atomic structure concepts, and apply them to real-world scenarios.

CHE-102-P: Chemistry Practical -I

After the completion of this course, student will be able to-

CO-1: acquire basic knowledge of experiments of including adsorption, organic qualitative analysis, and inorganic preparations and estimations.

CO-2: utilize theoretical concepts to perform experiments, interpret data, and formulate conclusions.

CO-3: foster critical thinking abilities to assess and enhance the reliability and accuracy of experimental findings.

CO-4: report scientific findings of laboratory experiments.

CO-5: evaluate experimental outcomes to draw insightful conclusions.

CO-6: develop problem-solving skills.

SEC-101-CHE (A)-T Chemistry Laboratory Skills – I

After the completion of this course, student will be able to-

CO1: know the Lab Safety

CO2: demonstrate laboratory apparatus, equipments, reagents and laboratory techniques.

CO3: prepare reagents and solutions of various concentrations.

CO4: explain standard safety guidelines, apparatus, reagents, solvents, solutions and laboratory

techniques.

CO5: prepare solutions of various concentrations

CO6: design safe methods for laboratory techniques.

CHE-151-T: Fundamentals of Chemistry-II

After the completion of this course, student will be able to-

CO1: recall and explain the fundamental principles and concepts from Photochemistry, Chemical Kinetics, Periodicity, Stereochemistry, and Chemical Bonding.

CO2: identify experimental key concepts involved in Photochemistry, Chemical Kinetics, Periodicity, Stereochemistry, and Chemical Bonding.

CO3: draw conclusions about reaction mechanisms, kinetics, periodic trends, stereochemical relationships, and bonding properties.

CO4: apply the principles of Photochemistry, Chemical Kinetics, Periodicity, Stereochemistry,

and Chemical Bonding to solve complex problems and scenarios.

CO5: evaluate the significance of photochemical reactions, kinetic processes, periodicity, bonding theories like VBT and MOT and stereochemical structures.

CO6: propose solutions, and contribute to the advancement of scientific knowledge applications.

SEC-151 CHE (A)-T: Chemistry Laboratory Skills-II

After the completion of this course, student will be able to-

CO1: know the Lab Safety

CO2: demonstrate laboratory apparatus, equipments, reagents and laboratory techniques.

CO3: prepare reagents and solutions of various concentrations.

CO4: explain standard safety guidelines, apparatus, reagents, solvents, solutions and laboratory

techniques.

CO5: justify the filing and record systems.

CO6: create a standard operating procedure for working in a laboratory.