



Savitribai Phule Pune University

(Formerly University of Pune)



Styaniketan's

Adv. M. N. Deshmukh Arts, Science and Commerce College Rajur

B.Sc. in Chemistry

(Faculty of Science & Technology)

Course Outcomes

F.Y. B. Sc. Chemistry

(As Per National Education Policy-2020)

Semester-I

CHE-101-T: Fundamentals of Chemistry-I

Course type: Major (Theory) No. of Credits: 2

Course Outcomes

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

Course type: Major (Practical) No. of Credits: 2

Course Outcomes

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.

OE-101-CHE (B)-T: Chemistry for Competitive Examination – I

Course type: Open Elective (Theory) No. of Credits: 2

Medium of Teaching and Evaluation: English/Marathi

Course Outcomes

CO-1: Define the terms matter, atom, chemical bond, oxidation, reduction, acid, base, catalysis, solution, fuel, element, metal, metallurgy, isomerism, polymer, rubber, explosives, drugs, oil mole, millimole, waxes, etc.

CO-2: Describe structure of atom, chemical bonding, Chemical symbol, formula and equation, Periodic classification of elements, the analytical perspectives.

CO-3: Explain the terms alcohols, Petroleum, Soap and detergents, Oils and fats, Waxes, . Polymers, Rubbers, Explosives, Drugs & chemicals, Fuels, and Radioactivity.

CO-4: Distinguish between the mass and weight, mole and millimole, soap and detergents, acid and bases, oxidation and reduction, etc.

CO-5: Classify chemical bond, polymers, explosives, rubber, waxes, soap and detergents.

CO-6: Give uses of polymers, explosives, rubber, waxes, soap and detergents, petroleum, etc.

Semester-II

CHE-151-T: Fundamentals of Chemistry-II

Course type: Major (Theory) No. of Credits: 2

Course Outcomes

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.

CHE-152-P: Chemistry Practical-II

Course type: Major (Practical) No. of Credits: 2

Course Outcomes

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

CO-1: learn vital lab techniques: colorimetry, kinetics, organic purification, investigative inorganic experiments, and Avogadro applications.

CO-2: apply theoretical principles to design and conduct experiments, analyze data, and draw conclusions.

CO-3: cultivate critical thinking skills to ensure the reliability and accuracy of experimental results.

CO-4: communicate scientific findings through laboratory reports, utilizing proper scientific formatting, terminology, and data analysis techniques.

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

CO-6: develop problem-solving skills.

OE-151-CHE (A)-T: Chemistry for Competitive Examination – II

Course type: Open Elective (Theory) No. of Credits: 2

Medium of Teaching and Evaluation: English/Marathi

Course Outcomes

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

CO-1: Define the terms matter, atom, chemical bond, valency, dipole moment, hydrogen bond, oxidation, reduction, acid, base, catalysis, solution, element, metal, isomerism, polymer, rubber, explosives, drugs, etc.

CO-2: Describe structure of atom, chemical bonding, Chemical symbol, formula and equation, Periodic classification of elements.

CO-3: Explain the terms catenation, Petroleum, Allotropes, Polymers, Rubbers, Explosives, Drugs & chemicals, latent heat, specific heat capacity

CO-4: Distinguish between the metal and nonmetal, VBT and MOT, acid and bases, oxidation and reduction, etc.

CO-5: Classify chemical bond, polymers, explosives, rubber, Matter, elements, Drugs.

CO-6: Give uses of polymers, explosives, rubber, petroleum, Drugs and chemical, pesticide, insecticide, fungicide, herbicide, etc.

SEC-151 CHE (B)-P: Basics in Computer for Chemistry

Course type: Skill Enhancement (Practical) No. of Credits: 2

Course Outcomes

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

CO-1: Create and format chemistry documents and spreadsheets using Word, Excel, or Google tools.

CO-2: Design chemistry presentations with multimedia elements using PowerPoint or Google Slides.

CO-3: Utilize chemistry software for drawing structures and predicting compound properties.

CO-4: Explore and report on online chemistry learning resources like SWAYAM and NPTEL.

CO-5: Summarize research and review articles in chemistry with key components.

CO-6: Create and manage digital images and videos using tools like Paint and video recording software.