

COURSE OUTCOME

B.Sc. Chemistry
CHC - 100: Fundamentals of Chemistry

At the end of this Course, student will have developed the ability to:

CO – 1	Identify the properties of liquid and gases.
CO – 2	Explain the applications of liquid and gases.
CO – 3	Elucidate the atomic structure based on Quantum theory.
CO – 4	Identify the use of curved arrow notations in organic reaction mechanisms.
CO – 5	Understand various methods of preparation and reactions of alkanes, alkenes and alkynes.

COURSE OUTCOME

B.Sc. Chemistry
CHC-111: Basic Concepts in Chemistry

At the end of this Course, student will have developed the ability to:

CO – 1	Explain the terms involved in chemical thermodynamics and equilibrium.
CO – 2	Evaluate different thermodynamic parameters.
CO – 3	Discuss the development of Modern Periodic table and periodic trends
CO – 4	Classify the acids and bases using the various theories.
CO – 5	Write the names and structures of the organic compounds using IUPAC nomenclature.
CO – 6	Understand the importance of selected organic compounds.

COURSE OUTCOME

B.Sc. Chemistry
CHC-131: Introduction to Chemistry

At the end of this Course, student will have developed the ability to:

CO – 1	Describe the chemistry as a scientific discipline.
CO – 2	Describe the development and branches of Chemistry
CO – 3	Appreciate the utility of chemistry in day-to-day life.
CO – 4	Explain the preliminary chemical aspects of environment and pollution.
CO – 5	Describe and appreciate the contributions of important Indian scientists.

COURSE OUTCOME

B.Sc. Chemistry
CHC-141: Water and Soil Analysis

At the end of this Course, student will have developed the ability to:

CO – 1	Understand the fundamentals and techniques of water and soil sampling.
CO – 2	To describe the methods for the determination of various physico-chemical parameters of soil and water.

COURSE OUTCOME

B.Sc. Chemistry
CHC-143: Chemistry of Cosmetics and Perfumes

At the end of this Course, student will have developed the ability to:

CO – 1	Understand the classification, preparation and uses of various cosmetic products with special reference to ingredients and their functions.
CO – 2	Explain the formulation of perfumes including scent notes, scent families and the fragrance wheel.
CO - 3	Identify essential and volatile oils from plant and animal sources, and articulate selected structures, uses and syntheses.
CO – 4	Apply various separation techniques to extract essential oils.

COURSE OUTCOME

B.Sc. Chemistry
CHC-200: Concepts in Inorganic and Physical Chemistry

At the end of this Course, student will have developed the ability to:

CO – 1	Explain the trend of periodic properties of elements, geometry of molecules, and stability of ionic solids.
CO – 2	Construct and interpret the molecular orbital diagram of homonuclear and heteronuclear molecules.
CO - 3	Predict the colligative properties of different systems.
CO – 4	Calculate the distribution coefficient of binary systems.
CO – 5	Prepare normal and molar solutions of a substance.
CO – 6	Calculate the amount of substance in given solutions.
CO – 7	Carry out volumetric and gravimetric experiments for the estimation of unknown substances.
CO – 8	Deduce the lattice parameters of crystalline solids

COURSE OUTCOME

B.Sc. Chemistry
CHC-201: Concepts in Organic and Analytical Chemistry

At the end of this Course, student will have developed the ability to:

CO – 1	Write the mechanism for substitution reactions of alkyl and aryl halides.
CO – 2	Write reactions for preparation and reactivity effects in case of alcohols, phenols, aldehydes, ketones and benzene.
CO - 3	Explain the Scope and importance of analytical chemistry and principles involved in Classical methods of analysis, UV-Visible spectrophotometric and Solvent extraction.
CO – 4	Synthesize simple organic compounds.
CO – 5	Analyse and identify organic compounds using classical qualitative analysis.
CO – 6	Solve numericals based on statistical data obtained from experimental results.
CO – 7	Compare different methods of quantitative and qualitative analysis.
CO – 8	Perform extraction and separation of chemical mixtures

COURSE OUTCOME	
B.Sc. Chemistry CHC – 211: Basic Industrial Chemistry	
At the end of this Course, student will have developed the ability to:	
CO – 1	Apply principles of temperature measurement and understand the working and applications of these instruments in industrial settings.
CO – 2	Integrate knowledge gained in different modules to propose comprehensive solutions to challenges in industrial chemistry.
CO - 3	Assimilate information on raw materials, economic considerations & intellectual property in various industries and explain the same.
CO – 4	Analyze the characteristics of industrial wastes, and understand principles of waste treatment thus proposing effective methods for the treatment and disposal of industrial waste.

COURSE OUTCOME	
B.Sc. Chemistry CHC-231:-Environmental Sustainability: Natural resources and Community	
At the end of this Course, student will have developed the ability to:	
CO – 1	To describe the fundamentals of environment and sustainable development.
CO – 2	To discuss the significance of natural resources and biodiversity.
CO - 3	To propagate environmental education, human rights and awareness of disaster management.

COURSE OUTCOME	
B.Sc. Chemistry CHC-242:- Introductory skills in Green Chemistry	
At the end of this Course, student will have developed the ability to:	
CO – 1	Understand the chemical disasters in the world.
CO – 2	Explain the need for green chemistry.
CO - 3	Explain the concept of green chemistry and its 12 principles
CO – 4	Apply the knowledge of green chemistry principles in designing green and innovative experiments.
CO – 5	Understand the practical aspects of green chemistry.
CO – 6	Calculate atom economy for measuring greenness.
CO – 7	Prepare bioactive compounds within the framework of green chemistry.
CO – 8	Apply the concept of waste valorization to get useful products.

COURSE OUTCOMEB.Sc. Chemistry
CHC-242:- Introductory skills in Green Chemistry

At the end of this Course, student will have developed the ability to:

CO – 1	Explain various organic reactions for synthesis of drugs.
CO – 2	Write the retrosynthetic approach for synthesis of drugs.
CO – 3	Identify types of assay.
CO – 4	Compare chemical and bioassay.
CO – 5	Identify functional groups in approved drugs.
CO – 6	Perform synthesis of drugs and drug like entities.
CO – 7	Determine the purity of drugs titrimetrically as well as by instrumental method.
CO – 8	Perform TLC analysis of drugs.

COURSE OUTCOMEB.Sc. Chemistry
CHC-202:- Organic Chemistry – I

At the end of this Course, student will have developed the ability to:

CO – 1	Explain the preparation and reactions of carboxylic acids and amines.
CO – 2	Identify conjugation and calculate λ_{\max} of organic compounds.
CO – 3	Draw stereoisomers of organic compounds.
CO – 4	Assign E/Z and R/S configuration to organic compounds.
CO – 5	Estimate the organic compounds.
CO – 6	Acquire hands on training in organic chemistry preparation methods.
CO – 7	Analyse and identify organic compounds using classical qualitative analysis.
CO – 8	Apply theoretical knowledge in understanding laboratory skills.

COURSE OUTCOMEB.Sc. Chemistry
CHC-203: Inorganic Chemistry-I

At the end of this Course, student will have developed the ability to:

CO – 1	Explain the principles underlying inorganic qualitative analysis.
CO – 2	Explain the characteristics of s, p and d-block elements and postulates of Werner's theory of coordination compounds.
CO - 3	Write IUPAC nomenclature and identify different types of isomers of coordination compounds.
CO – 4	Describe the structure and bonding in noble gas compounds.
CO – 5	Perform a qualitative analysis of inorganic mixtures.
CO – 6	Prepare coordination compounds of transition elements.
CO – 7	Determine unknown concentration of analytes using volumetric and gravimetric procedures.

COURSE OUTCOMEB.Sc. Chemistry
CHC-204- Physical Chemistry-I

At the end of this Course, student will have developed the ability to:

CO – 1	Calculate and explain various thermodynamic parameters of chemical reactions.
CO – 2	Differentiate between different nuclear counters.
CO - 3	Estimate quantum yields of photochemical reactions.
CO – 4	Compare the strength of the acids.
CO – 5	Determine graphically order of reaction and estimate the energy of activation.
CO – 6	Estimate the stability constant of various complexes.

COURSE OUTCOMEB.Sc. Chemistry
CHC-205- Pharmaceutical Chemistry-I

At the end of this Course, student will have developed the ability to:

CO – 1	Explain the terminologies in pharmaceutical chemistry.
CO – 2	Write the structures of selected drugs.
CO – 3	Write the mechanism of action of drugs.
CO – 4	Present structure activity relationship analysis of drugs.

COURSE OUTCOME

B.Sc. Chemistry
CHC-221- Basics of Chemical Laboratory Management

At the end of this Course, student will have developed the ability to:

CO – 1	Implement necessary precaution while working in chemical laboratory
CO – 2	Apply procedure of management, purchase and storage.
CO – 3	Identify and classify common glassware and apparatus, prepare standard solutions and know the basics of Identify and classify different glasswares.
CO – 4	Prepare solution of different strength/volume and know the different terms used for labelling concentration.
CO – 5	Identify and classify different types electrodes.
CO – 6	Interpret hazard symbols and labels of supplied commercial chemicals.