

BSc. Chemistry Core course outcomes

Name of the course	Course code	Course outcomes
Theoretical and Inorganic Chemistry- I	CHE1B01	CO1: To apply the methods of a research project. CO2: To understand the principles behind volumetry. CO3: To analyse the characteristics of different elements. CO4: To distinguish between different acid base concepts. CO5: To analyse the stability of different nuclei.
Theoretical and Inorganic Chemistry- II	CHE2B02	CO1: To understand the importance and the impact of quantum revolution in science. CO2: To understand and apply the concept that the wave functions of hydrogen atom are nothing but atomic orbitals. CO3: To understand that chemical bonding is the mixing of wave functions of the two combining atoms. CO4: To understand the concept of hybridization as linear combination of orbitals of the same atom. CO5: To inculcate an atomic/molecular level philosophy in the mind.
PHYSICAL CHEMISTRY - I	CHE3B03	CO1: To understand the properties of gaseous state and how it links to thermodynamic systems. CO2: To understand the concepts of thermodynamics and it's relation to statistical thermodynamics. CO3: To apply symmetry operations to categorize different molecules.
ORGANIC CHEMISTRY- I	CHE4B04	CO1: To apply the concept of stereochemistry to different compounds. CO2: To understand the basic concepts of reaction mechanism. CO3: To analyse the mechanism of a chemical reaction. CO4: To analyse the stability of different aromatic systems.

INORGANIC CHEMISTRY PRACTICAL - I	CHE4BO5(P)	CO1: To enable the students to develop skills in qualitative analysis and preparing inorganic complexes. CO2: To understand the principles behind quantitative analysis. CO3: To apply appropriate techniques of volumetric quantitative analysis in estimations. CO4: To analyse the strength of different solutions.
INORGANIC CHEMISTRY – III	CHE5BO6	CO1: To understand the principles behind qualitative and quantitative analysis. CO2: To understand basic processes of metallurgy and to analyse the merits of different alloys. CO3: To understand the applications of different inorganic polymers. CO4: To analyse different polluting agents. CO5: To apply the principles of solid waste management.
ORGANIC CHEMISTRY - II	CHE5BO7	CO1: To understand the difference between alcohols and phenols. CO2: To understand the importance of ethers and epoxides. CO3: To apply organometallic compounds in the preparation of different functional groups. CO4: To apply different reagents for the interconversion of aldehydes, carboxylic acids and acid derivatives. CO5: To apply active methylene compounds in organic preparations.
PHYSICAL CHEMISTRY - II	CHE5BO8	CO1: To apply the concept of kinetics, catalysis and photochemistry to various chemical and physical processes. CO2: To characterise different molecules using spectral methods. CO3: To understand various phase transitions and its applications.

OPEN COURSE ENVIRONMENTAL CHEMISTRY	CHE5D01	CO 1: Recall the technical/scientific terms involved in pollution. CO 2: Understand the causes and effects of air pollution. CO 3: Understand the sources, types and effects of water pollution. CO 4: Describe water quality parameters. CO 5: Know soil, noise, thermal and radioactive pollutions and their effects. CO 6: Study various pollution control measures. CO 7: Understand the basics of green chemistry.
INORGANIC CHEMISTRY- IV	CHE6B09	CO1: To understand the principles behind different instrumental methods. CO2: To distinguish between lanthanides and actinides. CO3: To appreciate the importance of CFT. CO4: To understand the importance of metals in living systems. CO5: To distinguish geometries of coordination compounds.
ORGANIC CHEMISTRY - III	CHE6B10	CO1: To elucidate the structure of simple organic compounds using spectral techniques. CO2: To understand the basic structure and tests for carbohydrates. CO3: To understand the basic components and importance of DNA. CO4: To understand the basic structure and applications of alkaloids and terpenes. CO5: To distinguish different pericyclic reaction
PHYSICAL CHEMISTRY - III	CHE6B11	CO1: To understand the basic concepts of electrochemistry. CO2: To understand the importance of colligative properties. CO3: To relate the properties of materials/solids to the geometrical properties and chemical compositions.

ADVANCED AND APPLIED CHEMISTRY	CHE6B12	<p>CO1: To understand the importance of nanomaterials.</p> <p>CO2: To appreciate the importance of green approach in chemistry.</p> <p>CO3: To understand the uses and importance of computational calculations in molecular design.</p> <p>CO4: To understand the role of chemistry in human happiness index and life expectancy</p>
ELECTIVE POLYMER CHEMISTRY	CHE6B13(E2)	<p>CO1: To understand various classification of polymers and types of polymerisation methods.</p> <p>CO2: To understand the important characteristics of polymers such as average molecular weight, glass transition temperature, viscoelasticity and degradation.</p> <p>CO3: To appreciate the importance of processing techniques.</p> <p>CO4: To characterise different commercial polymers and to un - recycling.</p>
PHYSICAL CHEMISTRY PRACTICAL	CHE6B14(P)	<p>CO1: To enable the students to develop analytical skills in determining the physical properties (physical constants).</p> <p>CO2: To develop skill in setting up an experimental method to determine the physical properties.</p> <p>CO3: To understand the principles of Refractometry, Potentiometry and Conductometry.</p>

ORGANIC CHEMISTRY PRACTICAL	CHE6B15(P)	<p>CO1: To enable the students to develop analytical skills in organic qualitative analysis.</p> <p>CO2: To develop talent in organic preparations to ensure maximum yield.</p> <p>CO3: To apply the concept of melting or boiling points to check the purity of compounds.</p> <p>CO4: To analyse and characterise simple organic functional groups.</p> <p>CO5 :To analyse individual amino acids from a mixture using chromatography</p>
INORGANIC CHEMISTRY PRACTICAL - II	CHE6B16(P)	<p>CO1: To enable the students to develop analytical skills in inorganic quantitative analysis.</p> <p>CO2: To understand the principles behind gravimetry and to apply it in quantitative analysis.</p> <p>CO3: To understand the principles behind colorimetry and to apply it in quantitative analysis.</p>
INORGANIC CHEMISTRY PRACTICAL - III	CHE6B17(P)	<p>CO1: To enable the students to develop skills in inorganic quantitative analysis.</p> <p>CO2: To understand the principles behind inorganic mixture analysis and to apply it in qualitative analysis.</p> <p>CO3: To analyse systematically mixtures containing two cations and two anions.</p>
PROJECT WORK	CHE6B18(Pr)	<p>CO1: To understand the scientific methods of research project.</p> <p>CO2: To apply the scientific method in life situations.</p> <p>CO3: To analyse scientific problems systematically.</p>

BSc. Chemistry Complementary course outcomes

Name of the course	Course code	Course outcomes
GENERAL CHEMISTRY	CHE1CO1	CO1: To understand and to apply the theories of quantitative and qualitative analysis. CO2: To understand the theories of chemical bonding. CO3: To appreciate the uses of radioactive isotopes. CO4: To understand the importance of metals in biological systems.
PHYSICAL CHEMISTRY	CHE2CO2	CO1: To understand the importance of free energy in defining spontaneity. CO2: To realise the theories of different states of matter and their implication. CO3: To understand the basic principles of electrochemistry.
ORGANIC CHEMISTRY	CHE3CO3	CO1: To understand the basic concepts involved in reaction intermediates. CO2: To realise the importance of optical activity and chirality. CO3: To appreciate the importance of functional groups and aromatic stability. CO4: To understand the basic structure and importance of carbohydrates, nucleic acids, alkaloids and terpenes.
PHYSICAL AND APPLIED CHEMISTRY	CHE4CO4	CO1: To understand the basic concepts behind colloidal state and nanochemistry. CO2: To understand the importance of green chemistry and pollution prevention.

		CO3: To appreciate the importance of different separation methods and spectral techniques. CO4: To understand the extent of chemistry in daily life.
CHEMISTRY PRACTICAL	CHE4CO5(P)	CO1: To understand the basic concepts of inter group separation. CO2: To enable the students to develop analytical and preparation skills.