

B.SC -CHEMISTRY

COURSE OUTCOME

No	Course code And Nature of course	Course title	Course outcome and objectives
1	CHE1B01 (core)	Theoretical and Inorganic Chemistry- I	<ul style="list-style-type: none"> • 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.
2	CHE2B02 (core)	Theoretical and Inorganic Chemistry- II	<ul style="list-style-type: none"> • 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.
3	CHE3B03 (core)	Physical chemistry -I	<ul style="list-style-type: none"> • 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.
4	CHE4B04 (core)	Organic chemistry-I	<ul style="list-style-type: none"> • 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.
5	CHE4B05(P) (core)	Inorganic chemistry Practical -I	<ul style="list-style-type: none"> • CO1 To enable the students to develop skills in quantitative 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.
6	CHE5B06 (core)	Inorganic chemistry -III	<ul style="list-style-type: none"> • 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.
7	CHE5B07 (core)	Organic chemistry -II	<ul style="list-style-type: none"> • 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 inter conversion of aldehydes, carboxylic acids and acid derivatives. • CO5 To apply active methylene compounds in organic preparations.

8	CHE5B08 (core)	Physical chemistry –II	<ul style="list-style-type: none"> • 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.
9	CHE6B09 (core)	Inorganic chemistry – IV	<ul style="list-style-type: none"> • 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.
10	CHE6B10 (core)	Organic chemistry –III	<ul style="list-style-type: none"> • 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 reactions.
11	CHE6B11 (core)	Physical chemistry –III	<ul style="list-style-type: none"> • 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.
12	CHE6B12 (core)	Advance and applied chemistry	<ul style="list-style-type: none"> • CO1 To understand the importance of nanomaterial's. • CO2 To appreciate the importance of green approach in chemistry. • CO3 To understand the uses and importance of computational calculations in molecular design. • CO4 To understand the role of chemistry in human happiness index and life expectancy.
13	CHE6B13(E2)	Polymer chemistry	<ul style="list-style-type: none"> • CO1 To understand various classification of polymers and types of polymerisation methods. • CO2 To understand the important characteristics of polymers such as average molecular weight, glass transition temperature, viscoelasticity and degradation. • CO3 To appreciate the importance of processing techniques. • CO4 To characterise different commercial polymers and to understand the significance of recycling.
14	CHE6B14(P) (core)	Physical chemistry Practical -I	<ul style="list-style-type: none"> • CO1 To enable the students to develop analytical skills in determining the physical properties (physical constants). • CO2 To develop skill in setting up an experimental method to determine the physical properties. • CO3 To understand the principles of Refractometry, Potentiometry and Conductometry.
15	CHE6B15(P) (core)	Organic chemistry Practical -II	<ul style="list-style-type: none"> • CO1 To enable the students to develop analytical skills in organic qualitative analysis. • CO2 To develop talent in organic preparations to ensure maximum yield. • CO3 To apply the concept of melting or boiling points to check the purity of compounds. • CO4 To analyse and characterise simple organic functional groups. • CO5 To analyse individual amino acids from a mixture using chromatography.

16	CHE6B16(P) (core)	Inorganic chemistry Practical -III	<ul style="list-style-type: none"> • CO1 To enable the students to develop analytical skills in inorganic quantitative analysis. • CO2 To understand the principles behind gravimetry and to apply it in quantitative analysis. • CO3 To understand the principles behind colorimetry and to apply it in quantitative analysis.
17	CHE6B17(P) (core)	Inorganic chemistry Practical -IV	<ul style="list-style-type: none"> • CO1 To enable the students to develop skills in inorganic qualitative analysis. • CO2 To understand the principles behind inorganic mixture analysis and to apply it in qualitative analysis. • CO3 To analyse systematically mixtures containing two cations and two anions.
18	CHE6B18(Pr) (core)	Project work	<ul style="list-style-type: none"> • CO1 To understand the scientific methods of research project. • CO2 To apply the scientific method in life situations. • CO3 To analyse scientific problems systematically.
19	CHE1C01 (complementary)	General chemistry	<ul style="list-style-type: none"> • 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.
20	CHE2C02 (complementary)	Physical chemistry	<ul style="list-style-type: none"> • 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.
21	CHE3C03 (complementary)	Organic chemistry	<ul style="list-style-type: none"> • 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.
22	CHE4C04 (complementary)	Physical and applied chemistry	<ul style="list-style-type: none"> • 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.
23	CHE4C05(P) (complementary)	Chemistry practical	<ul style="list-style-type: none"> • CO1 To understand the basic concepts of inter group separation. • CO2 To enable the students to develop analytical and preparation skills.