

PROGRAMME AND COURSE OUTCOME

B.Sc. CHEMISTRY

Program outcome

- To understand the basic facts and concepts in chemistry
- To apply the principles of Chemistry
- To appreciate the achievements in Chemistry
- To know the role of chemistry in nature and in society
- To familiarize with emerging areas of chemistry
- To familiarize with various applications of chemical sciences and to apprise the students of its relevance in future studies
- To develop the skills in the proper handling of chemicals and basics of instrumentation
- To Familiarize with the different processes used in industries and their applications
- To develop an ecofriendly attitude by creating a sense of environmental awareness
- To be conversant with the applications of chemistry in day to day life

University link for B.Sc. Chemistry syllabus – <http://14.139.185.6/website/syllabus/syl588.pdf>

COURSE OUTCOME:

Sl No	Name of the paper	Course Code	Course outcome
1	Theoretical and Inorganic Chemistry- I	CHE1B01	<ul style="list-style-type: none">● To gain detailed knowledge of the principle of volumetric analysis and properties of s and p block elements● To apply the methods of a research projects● To understand the principles behind the volumetric● Analyze the characteristics of different elements● To distinguish between different acid base concepts● To analyze the stability of different nuclei
2	Theoretical and Inorganic Chemistry- II	CHE2B02	<ul style="list-style-type: none">● To understand the importance and the impact of quantum revolution in science.● To understand and apply the concept that the wave functions of hydrogen atom are nothing but atomic orbitals.● To understand that chemical bonding is the mixing of wave functions of the two combining atoms

			<ul style="list-style-type: none"> ● To understand the concept of hybridization as linear combination of orbitals of the same atom. ● To inculcate an atomic/molecular level philosophy in the mind
3	Physical Chemistry-I	CHE3B03	<ul style="list-style-type: none"> ● To understand the properties of gaseous state and how it links to thermodynamics system ● To understand the concepts of thermodynamics and its relation to statistical thermodynamics ● To apply the symmetry operations to categorize different molecules
4	Organic Chemistry-I	CHE4B04	<ul style="list-style-type: none"> ● To apply the concepts of stereo chemistry to different compounds ● To understand the basic concepts of reaction mechanism ● To analyze the mechanism of a chemical reaction ● To analyze the stability of different aromatic system
5	Inorganic Chemistry Practical-I	CHE4B05(P)	<ul style="list-style-type: none"> ● To develop skills in quantitative analysis and preparing inorganic complexes ● To understand the principles behind quantitative analysis ● To apply appropriate techniques of volumetric quantitative analysis in estimation ● To analyze the strength of different solution
6	Inorganic Chemistry-III	CHE5B06	<ul style="list-style-type: none"> ● To understand the principles behind qualitative and quantitative analysis ● To understand basic processes of metallurgy and to analyze the merits of different alloys ● To understand the applications of different inorganic polymers ● To analyze different polluting agents ● To apply the principles of solid waste management
7	Organic Chemistry-II	CHE5B07	<ul style="list-style-type: none"> ● To understand the difference between alcohols and phenols

			<ul style="list-style-type: none"> • To understand the importance of ethers and epoxides • To apply organometallic compounds in the preparation of different functional groups • To apply different reagents for the inter conversions of aldehydes, carboxylic acids and acid derivatives • To apply active methylene compounds in organic preparations
8	Physical Chemistry-II	CHE5B08	<ul style="list-style-type: none"> • To apply the concept of kinetics, catalysis and photochemistry to various chemical and physical processes • To characterize different molecules using spectrum methods • To understand various phase transitions and its applications
9	Inorganic Chemistry-IV	CHE6B09	<ul style="list-style-type: none"> • To understand the principles behind different instrumental methods to distinguish between lanthanides and actinides • To understand the importance of metals in living system • To appreciate the importance of CFT • To distinguish geometries of coordination compounds
10	Organic Chemistry-III	CHE6B10	<ul style="list-style-type: none"> • To elucidate the structure of symbol organic compounds using spectral techniques • To understand the basic structure and test for carbohydrates • To understand the basic components and importance of DNA • To understand the basic structure and applications of alkaloids and terpenes • To distinguish different pericyclic reactions
11	Physical Chemistry-III	CHE6B11	<ul style="list-style-type: none"> • To understand the basic concepts of electrochemistry • Understand the importance of colligative property

			<ul style="list-style-type: none"> To relate the properties of material or solids to the geometrical properties and chemical composition
12	Advanced and Applied Chemistry	CHE6B12	<ul style="list-style-type: none"> To understand the importance of nanomaterials. To appreciate the importance of green approach in chemistry. To understand the uses and importance of computational calculations in molecular design. To understand the role of chemistry in human happiness index and life expectancy.
13	Polymer Chemistry	CHE6B13(E2)	<ul style="list-style-type: none"> To understand various classification of polymers and types of polymerization methods. To understand the important characteristics of polymers such as average molecular weight, glass transition temperature, viscoelasticity and degradation. To appreciate the importance of processing techniques. To characterize different commercial polymers and to understand the significance of recycling.
14	Physical Chemistry Practical	CHE6B14(P)	<ul style="list-style-type: none"> To develop analytical skills in determining the physical properties To understand the principles of refractometry, potentiometry and conductometry.
15	Organic Chemistry Practical	CHE6B15(P)	<ul style="list-style-type: none"> To enable the students to develop analytical skills in organic qualitative analysis. To develop talent in organic preparations to ensure maximum yield. To apply the concept of melting or boiling points to check the purity of compounds. To analyse and characterise simple organic functional groups. To analyse individual amino acids from a mixture using chromatography.
16	Inorganic Chemistry Practical-II	CHE6B16(P)	<ul style="list-style-type: none"> To enable the students to develop analytical skills in inorganic quantitative analysis. To understand the principles behind gravimetry and to apply it in quantitative analysis.

			<ul style="list-style-type: none"> ● To understand the principles behind colorimetry and to apply it in quantitative analysis.
17	Inorganic Chemistry Practical-III	CHE6B17(P)	<ul style="list-style-type: none"> ● To enable the students to develop skills in inorganic quantitative analysis. ● To understand the principles behind inorganic mixture analysis and to apply it in quantitative analysis. ● To analyse systematically mixtures containing two cations and two anions.
18	Project Work	CHE6B18(Pr)	<ul style="list-style-type: none"> ● To understand the scientific methods of research project. ● To apply the scientific method in life situations. ● To analyse scientific problems systematically.