BSC BIOTECHNOLOGY			
Semester I/II/III/IV/V/VI	**All Subjects / Course**	**Objective of teaching the subject (Minimum 4)**	**OUTCOMES**
I	**USBT101: BASIC CHEMISTRY-I**	To acquaint the students with basic concepts of Chemistry like classification and nomenclature of chemical compounds	-
		To acquaint students with different properties of compounds due to different types of bonding between them like ionic bond, covalent bond, co-ordinate bond and hydrogen bond	
		To make the students understand about the biological role of water, its different properties of water and its interaction with different substances	
		To impart hands-on skills in preparation of buffers and solutions to students	
I	**USBT102: BASIC CHEMISTRY-II**	To acquaint the students with the concepts of stereochemistry	-
		To make the students familiar with different terms in volumetric analysis and gravimetric analysis	
		To make the students understand about the different methods of separation and their applications	
		To impart knowledge of titrimetric and volumetric estimations and handling of basic analytical techniques like chromatography and colorimetry	
II	**USBT201: CHEMISTRY-I: BIOORGANIC CHEMISTRY**	To aquaint the students with bioorganic molecules	-
		To impart the knowledge of classification, structure and characterization of biomolecules	
		To educate the students with different properties and reactivity of the biomolecules	
		To impart the knowledge of qualitative and quantitative analysis of different biomolecules	

II	**USBT202: CHEMISTRY-II: PHYSICAL CHEMISTRY**	To acquaint the students with the concepts in thermodynamics, kinetics and redox reactions	-
		To equip the students with the numericals-solving skills for numericals based on thermodynamics, kinetics and redox reactions	
		To impart knowledge to titrimetrically calculate the number of electrons being exchanged during a redox reaction	
		To impart practical knowledge to the students to calculate enthalpy change of reactions in thermodynamic reactions and to calculate the rate constants for first and second order kinetic reactions	
III	**USBT302: APPLIED CHEMISTRY-I**	To impart knowledge to students about different bio-inorganic ions and molecules in biological systems, their functions and importance	-
		To impart knowledge to students about the role of organic compounds in biological systems and synthesis of organic compounds	
		To inculcate a deep insight about the environmental issues caused due to different hazardous chemical reactions and solutions to them	
		To educate the students about alternate, green methods of performing reactions at laboratory-scale as well as industrial-scale	
IV	**USBT402: APPLIED CHEMISTRY-II**	To impart knowledge to students about the principle and working of different analytical instruments like GC, HPLC, HPTLC etc. and their application in Chemistry as well as Biotechnology field	-
		To impart knowledge to sudents about the different sampling and separation techniques for compounds and understanding the principle and applications in analytical fields	
		To teach the students about different natural products and polymers and their applications in chemistry, biotechnology and pharmaceutical fields	
		To introduce the students to the world of nanotechnology and impart knowledge about their preparation methods and applications in various fields	