Programme: B. Sc. Biotechnology

Course Outcomes: Table 3.1 Include course outcomes of one course from each semester of study year 2021- 22 respectively

BBT-1001 Chemistry (Year of Study: 2021–22)	
Course Outcome	**Statement**
On completion of this course, the students will be able to	
CO1	Learn different fundamentals of basic chemistry of different chemistry branches like organic chemistry, Inorganic, Physical etc.
CO2	Studies includes chemical bonding i.e. formation of different molecules types of bonds, hybridization, in thermodynamic studies free energy required for chemical and biochemical reactions and chemical kinetics rates of chemical reaction.
CO3	In stereo chemistry how different molecules/ bio-molecules are presented by different methods along with their stereo aspects like chirality, etc.
CO4	They will also learn electrochemical aspects during their course.
CO1	They will also perform experimental verification of some parts of theory.
BBT-1002 Cell Biology (Year of Study: 2021–22)	
Course Outcome	**Statement**
On completion of this course, the students will be able to	
CO1	Understanding of the structure of cell and various cellular events.
CO2	Understanding of the function of various subcellular organelles.
CO3	Students will learn about cell theory and techniques for fractionation of sub cellular organelles.
CO4	They will be acquainted to various microscopic techniques to visualize subcellular organelles.
CO5	Students will have an understanding of the composition of cytoskeleton and extracellular matrix.
CO6	Students will acquire knowledge of cell cycle, cell division and cell death mechanisms.
BBT-1003 English Communication-I (Year of Study: 2022–22)	
Course Outcome	**Statement**

On completion of this course, the students will be able to	
CO1	Analyse and restate the meaning of a text in English
CO2	Demonstrate the skill to write in English without grammatical error
CO3	Practice listening effectively to communication in English
CO4	Develop the ability to speak English language with the right way of pronunciation
CO5	Express the viewpoints with confidence in English
CO6	Express values and skills gained through effective communication to other disciplines
CO7	Compose articles and compositions in English
CO8	Discuss and socialize effectively in English
BBT-1004(A) Biotechnology and Human Welfare (Year of Study: 2021–22)	
Course Outcome	**Statement**
On completion of this course, the students will be able to	
CO1	Recognize the importance of various molecular techniques used in biotechnological industry and the importance of modern agriculture and its application.
CO2	Understand the importance of biotechnology in relation to environment and pollution.
CO3	Learn about various applications-based techniques in biotechnology like forensic science and the related activities currently going on and that will lay the foundations for the future work in relation to crime
CO4	Comprehend the application of biotechnology in therapeutic drug and vaccine development, gene therapy and diagnostics
BBT-2001 Plant Anatomy And Physiology (Year of Study: 2021–22)	
Course Outcome	**Statement**
On completion of this course, the students will be able to	
CO1	Illustrate the integration of individual functions of all cells, tissues and organs into functional whole-human body
CO2	Detect gross organs in the body
CO3	Identify various bones of the skeletal system
CO4	Find various blood indices
CO5	Determine the blood groups

CO6	Measure blood pressure
CO7	Integrate the knowledge of whole body organs and their mechanisms
CO8	Compare various health conditions and their effects
BBT-2002 Mammalian Physiology (Year of Study: 2021–22)	
Course Outcome	**Statement**
On completion of this course, the students will be able to	
CO1	Illustrate the integration of individual functions of all cells, tissues and organs into functional whole-human body
CO2	Detect gross organs in the body
CO3	Identify various bones of the skeletal system
CO4	Find various blood indices
CO5	Determine the blood groups
CO6	Measure blood pressure
CO7	Integrate the knowledge of whole body organs and their mechanisms
CO8	Compare various health conditions and their effects
BBT-2003 Environmental Sciences (Year of Study: 2021–22)	
Course Outcome	**Statement**
On completion of this course, the students will be able to	
CO1	Student understood the concept of environmental pollution, types of pollutants and related hazards
CO2	Acquire knowledge on environment protection acts and understand the need to conserve environment by implementing policies with the help of different organizations
CO3	Student understood the concept of environmental pollution, types of pollutants and related hazards
CO4	Acquire knowledge on environment protection acts and understand the need to conserve environment by implementing policies with the help of different organizations
CO5	Students will understand the structure, growth and the interactions of populations in the environment. Build awareness on disaster management, environmental movements and ethics

CO6	Field visit enhance the skill techniques among the students to document assets, study local polluted site and ecosystem structure and environmental impact.
BBT-2004 (A) Gene Organization, Expression and Regulation (Year of Study: 2021–22)	
Course Outcome	**Statement**
On completion of this course, the students will be able to	
CO1	Define the roles of DNA and proteins in cell development and metabolism
CO2	Define amino acid sequence of a protein given the nucleotide sequence of a gene
CO3	Describe the roles that the promoter, coding region, and, termination sequence of a gene play in gene expression.
CO4	Recognize the differences between the structure of proteins, amino acids, genes, and nucleotides
CO5	Draw the process of gene expression and include the following in your drawing. Gene, RNA, polymerase, promoter, coding region, termination sequence, intron, cell, nucleus, cytoplasm, RNA, tRNA, ribosome, anticodon, codon, amino acid, protein, peptide bond

Table 3.1: Course Outcomes