

B.Sc - Biotechnology Honours

Programme Outcomes

Number	Programme Outcomes
PO1	Summarize the concepts, principles, classification, theories and mechanisms
PO2	Discuss hypothesis, procedures, results, applications, conclusions
PO3	Tools and Techniques in solving problems, sample analysis and production
PO4	Develop Skills to sustainability, higher progression and employability

COURSE OUTCOMES

Semester/Title of paper	Course Outcomes
Semester I	
Introduction of Classical Biology	CO1: Learn the principles of classification and preservation of biodiversity CO2: Understand the plant anatomical, physiological and reproductive processes. CO3: Knowledge on animal classification, physiology, embryonic development and their economic importance. CO4: Outline the cell components, cell processes like cell division, heredity and molecular processes CO5: Comprehend the chemical principles in shaping and driving the macromolecules and life processes
Introduction of Applied Biology	CO1: Learn the history, ultrastructure, diversity and importance of microorganisms. CO2: Understand the structure and functions of macromolecules. CO3: Knowledge on biotechnology principles and its applications in food and medicine. CO 4: Outline the techniques, tools and their uses in diagnosis and therapy. CO5: Demonstrate the bioinformatics and statistical tools in comprehending the complex biological data
Semester II	
Biomolecules and analytical Techniques	CO1: Learn about classification, structure and properties of Carbohydrates, Proteins and Lipids. CO2: Learn about structure and function of DNA, RNA, Vitamins and Bioenergetics. CO3: Learn about basic principles of Centrifugation, Chromatography and Electrophoresis. CO4: Learn about principles of Spectroscopy, Microscopy and Techniques. CO5: Learn about basics of Biostatistics.
Microbiology and cell biology	CO1: Learn about Scope and Techniques of Microbiology. CO2: Learn about concept of Microbial species and strains CO3: Learn about cell structure and function. CO4: Learn about cell signalling and control mechanisms. CO5: Learn about genome organization of prokaryotic and eukaryotic organisms

Semester III	
Plant and animal Biotechnology	CO1: Learn about plant tissue culture techniques and secondary metabolites production. CO2: Learn about transgenesis and molecular markers. CO3: Learn about animal tissue culture techniques CO4: Learn about transgenic animals and gene therapy. CO5: Learn about Bioethics, Biosafety and IPR
Molecular Biology	CO1: Learn about genome structure and organization. CO2: Learn about mechanism and enzymes of DNA replication. CO3: Learn about enzymatic synthesis and features of transcription. CO4: Learn about regulation of gene expression. CO5. Learn about genetic code and protein synthesis.
Genetic Engineering	CO1: Learn about the history and tools of genetic engineering CO2: Learn about vectors used in genetic engineering CO3: Learn about Hybridization techniques CO4. Learn about vectors and their screening techniques CO5. Learn about gene editing tools
Metabolism	CO1: Learn about Carbohydrate metabolism CO2. Learn about Lipid metabolism CO3. Learn about Amino Acid metabolism CO4. Learn about nomenclature and specificity of enzymes CO5. Learn about enzyme kinetics of enzyme.
Semester IV	
Immunology	CO1: Learn about types of immunity and cells of immunity CO2: Learn about Antigen and Antibody CO3: Learn about cell , humoral immunity and MHC molecules CO4: Learn about Hypersensitivity and vaccines CO5: Learn about immunological techniques
Bioinformatics and Biostatistics	CO1: Learn about concept and branches of bioinformatics CO2: Learn about searching sequences using databases CO3. Learn about computer phylogenetics CO4. Learn about the measurement of central tendency CO5. Learn about test hypothesis
Medical Biotechnology	CO1: Learn about diseases caused by microbial sources CO2. Learn about epidemiology, pathogenicity, laboratory, diagnosis, prevention and control of bacterial diseases CO3. Learn about fungal, viral and protozoan diseases CO4. Learn about gene therapy and vectors used in gene therapy CO5. Learn about drug discovery, therapeutic applications