

B.SC BIOTECHNOLOGY - COURSE OUTCOME

DSC - Cell Biology	C01	To become skillful the basics of cell structure and classification.
	C02	To understand the component and functions of cells.
	C03	To learn the functional activity of cells.
	C04	To become familiar with cell multiplication and action.
	C05	Examine the characteristics of cellular organelles and interpret how it is involved in cell activity and communication.
Core Fundamentals Microbiology	C01	To gain insights on how the subject area developed over a period of time.
	C02	To impart knowledge on the working of different types of Microscopes.
	C03	To internalize the techniques used to observe microorganisms by different staining techniques.
	C04	To identify the different types of medium and techniques used for the growth and cultivation of microorganisms.
	C05	Able to aware of microbial Disease caused by Human.
Core - Principles of Genetics	C01	Understand the significance of Genetic materials and Mendel's law
	C02	Recognize differences between the biological sexual mechanisms
	C03	Analyze the genetic material based on their confirmation
	C04	Evaluate the nature and action of mutation
	C05	Predict the nature of gene frequency in a population.
DSC Bioinstrumentation	C01	Able to understand the principles of spectroscopy.
	C02	Analyze the application of chromatography techniques.
	C03	Apply the techniques for biomolecule separation process.
	C04	Evaluate the DNA and protein through Electrophoresis techniques.
	C05	Know the techniques for Gene amplification and sequencing.
Core - Plant Biotechnology	C01	To become familiar with plant tissue culture techniques and preparations.
	C02	To know the techniques for plant gene transformation and process.

	C03	To learn the functional activity of vectors for transformation.
	C04	To become familiar with transgenic plant with regulations.
	C05	To learn about Quality analysis of plant based products.
DSC - Animal biotechnology	C01	To understand the basic mechanism of mammalian cell
	C02	To get a idea for designing the tissue culture laboratory area.
	C03	To know the preparation and handling of primary culture
	C04	To become a familiar with Stem cell culture.
	C05	To know the applications and safety measures of Animal Biotechnology.
DSC - Molecular Biology	C01	To understand the genome organization in Prokaryotes and Eukaryotes
	C02	To know the central Dogma of the organisms.
	C03	To apply the mechanisms of gene regulation.
	C04	To analyze the DNA repair mechanism of bacterial genetics
	C05	To understand the chromosomal variation and mapping.
Core Environmental Biotechnology	C01	To understand the ecosystem structure and function
	C02	To know the solid waste management system
	C03	To apply the engineered bioremediation process
	C04	To analyze the indication of water pollution.
	C05	To understand the microorganisms and energy requirement of mankind.
Allied - Chemistry I	C01	To understand the fundamental chemistry applied in Biotechnology
	C02	To know the industrial processing of agriculture chemistry
	C03	To aware of the metals on industrial application
	C04	To become skillful amino acids and their properties.
	C05	To learn the principles of Electrochemical properties.
Allied - Biostatistics and Computer Application	C01	Able to understand the Basic statistical approach.
	C02	Analyze the application of various statistical calculations .
	C03	Apply the techniques for ANOVA.
	C04	Able to understand the Basics of Computer operation.
	C05	Know to access the windows operation.
DSC - Biochemistry	C01	To become skillful the basics structure and functions of Amino acids and Proteins

	C02	To understand the enzyme classification and activities.
	C03	To learn the functional activity of Carbohydrates.
	C04	To become familiar with Metabolism of carbohydrates.
	C05	To learn about Nucleic acid structure and functions.
Allied - Nanoscience & Nanotechnology	C01	To understand the History of Nanotechnology concept and applications.
	C02	To learn the biology of Nanoparticles synthesis and applications.
	C03	To know the techniques of Nanoparticle structure and preparations.
	C04	To become familiar with characterization of Nanoparticles.
	C05	To become know the applications of Nanobiotechnology.
SEC - Human Anatomy & Physiology	C01	To understand the structure of Human Body
	C02	To able to know the tissue level of Organization
	C03	To become familiar with structure and functions of Nervous system.
	C04	To know the cardiovascular systems.
	C05	To learn about the respiratory and digestive system .
Core - Immunology and Immunotechnology	C01	To understand the basic history of Immunology
	C02	To know the antigen and antibody classes and function
	C03	To apply the techniques for antigen and antibody interaction.
	C04	To analyze the MHC molecules and complement system of our immunity.
	C05	To understand the Hypersensitivity classes and reactions.
Allied - Pharmaceutical Biotechnology	C01	To understand the biopharmaceuticals current status and future prospects
	C02	To know the impact of genomes in drug discovery
	C03	To apply the preclinical studies of drug development
	C04	To analyze the purification of recombinant protein
	C05	To understand the patents in the pharmaceutical industry
SEC - Research Methodology	C01	To understand the research and research methods in bioscience.
	C02	To know the design of experimental research
	C03	To apply the sampling technique and survey
	C04	To analyze the data and interpretation
	C05	To understand the report writing and presentation of research report.
Lab in	C01	To understand the Antigen antibody interaction

Immunology and Animal Biotechnology	C02	To know the application of immune electrophoresis
	C03	To apply the protein identification and expression
	C04	To analyze the cells from chick embryo
	C05	To understand the establishment and maintenance of primary cell culture
Core - Genetic Engineering	C01	To understand the role of restriction enzymes
	C02	To know the properties of recombinant vectors
	C03	To apply the screening of cDNA library
	C04	To analyze the PCR based molecular marker
	C05	To understand the bacterial transformation and conjugation
Elective - Food Biotechnology	C01	To understand the associated microorganisms of food industry
	C02	To know the natural food products and their control
	C03	To apply the food preservation methods
	C04	To analyze the principle and operations of packing
	C05	To understand the methods and importance of quality control
Elective - Cancer Biology	C01	To understand the fundamentals of cancer biology
	C02	To know the principles of Carcinogenesis
	C03	To apply the molecular tools to indentify the cancer gene
	C04	To analyze the genetic characters of cancer gene
	C05	To understand the gene therapy cancer.
Elective - Medical Biotechnology	C01	To understand the associated reproductive technology and animal cell culture
	C02	To know the chromosomal disorders and disease
	C03	To apply the methods of diagnosis used in microbial disease
	C04	To analyze the prevention and treatment of bacterial disease.
	C05	To understand the modern medicine system and stem cell therapy.
Elective - Agriculture Biotechnology	C01	To understand the history of Indian agriculture
	C02	To know the microbes in agriculture and foods
	C03	To apply the production and utilization of essential amino acid
	C04	To analyze the genetic engineering for crop improvement
	C05	To understand the major crops and major disease in India.
SEC -	C01	To understand the major database in bioinformatics

Bioinformatics	C02	To know the central dogma of molecular biology
	C03	To apply the tools for web search and retrieval tools
	C04	To analyze the alignment of multiple sequence and phylogenetic analysis.
	C05	To understand the protein identification and characterization.
Lab in Genetic engineering and Molecular Biology	C01	To understand the isolation of genomic DNA
	C02	To know the characteristics of restriction enzymes
	C03	To apply the gene amplification polymerase chain reaction
	C04	To analyze the gene polymorphism of using RAPD technique
	C05	To understand the southern hybridization process.
Elective - Industrial Biotechnology	C01	To understand the biotechnology based commercial product.
	C02	To know the industrially importance microorganisms
	C03	To apply the fermentor for batch and continuous culture.
	C04	To analyze the downstream processing.
	C05	To understand the industrial process of amino acid and organic acid.
Elective - Bioethics, IPR and Biosafety	C01	To understand the legal and ethical impact of biotechnology
	C02	To know the intellectual property rights
	C03	To apply the concept of patent system and law
	C04	To analyze the bio-safety of good lab practice
	C05	To understand the biodiversity and concepts
Elective - Biodiversity and Ecology	C01	To understand the fundamentals of Ecology
	C02	To know the Diversity of species
	C03	To apply the population and community based research
	C04	To analyze the aquatic and terrestrial communities
	C05	To understand the practical and field experiments using standard methods
Elective - Herbal Technology	C01	To understand the history and scope of herbal medicines
	C02	To know the systematic use of Pharmacognosy studies
	C03	To apply the phytochemistry through medicinal plant
	C04	To analyze the drug adulteration and screening
	C05	To understand the medicinal plant biotechnology in pharma industry

SEC - Entrepreneurial Development Program	C01	To know about the role of the entrepreneur in India and around and the globe, understand the benefits and drawbacks of entrepreneurship and students has to avoid them; entrepreneurial failure.
	C02	The course aims to develop student's ability to create, lead and coordinate projects within the textile and fashion sector. It also intends to provide tools and methods in order to make use of entrepreneurial thinking to develop a business project.
	C03	Students will be able to define, identify and/or apply the principles of new venture financing, growth financing, and growth financing for existing businesses.
	C04	To understand process of women entrepreneur and how faced their problems
	C05	To understand difference between Micro, small and medium Enterprises.
Lab in Environmental and Industrial Biotechnology	C01	To understand the quality of water
	C02	To know the biological and chemical oxygen demand
	C03	To apply the industrial effluent treatment
	C04	To analyze the quality of ethanol production
	C05	To understand the production of antibiotics.