

CO -Microbiology			
Semester I	COURSE NAME		Course Outcomes
	Fundamentals of Microbiology	CO1	To understand the diversity of Microbial world and their interactions.
		CO2	to know about the genetic materials and genetic mechanism.
		CO3	To emphasize the importance of sterilization and disinfection methods
		CO4	to categorize microorganisms based on their characters.
	Fundamentals of Biochemistry	CO1	Theoretical knowledge of various topics as per syllabus
		CO2	Exhaustive study of carbohydrates, lipids, proteins and its classification
		CO3	Understanding of different level of protein structure, DNA etc
		CO4	To explain different macromolecular interactions
	Analytical Techniques, Biostatistics and Bioinformatics	CO1	To understand the working principle and applications of various tools used in analysis of biomolecules
		CO2	To understand the role of microscopy in biology
		CO3	explain the applications and basics of bioinformatics
		CO4	Explain the basic concepts of biostatistics and measures of central tendency.
	Cell Biology	CO1	To understand the various organelles of a cell and its function
		CO2	To know about the different cellular receptors and signal transduction pathway
		CO3	To understand the cell cycle and apoptosis
CO4		To understand the etiology of cancer	
Laboratory Course I	CO1	Practical knowledge about the concept of biochemistry	
	CO2	Qualitative analysis of sugar analysis & separation of amino acids by chromatographic methods	
	CO3	Quantitative analysis of carbohydrates, proteins, cholesterol etc	
	CO4	Practical knowledge in Genetics	
COURSE NAME		Course Outcomes	
Immunology	CO1	To conceptualize cellular and molecular basis of immune system	
	CO2	To appreciate the structure and functions of MHC molecules and immunoglobulin	
	CO3	To understand the complement system, its activation.	
	CO4	To understand about the vaccine in use and the strategies to develop vaccine of the future	
Molecular Biology and Recombinant	CO1	Understanding of Genome Organization, types of genes & to know concepts of DNA, RNA, replication, transcription, translation process	
	CO2	To analyse various concepts about gene regulation, operon concept etc & to understand the concept of siRNA, miRNA	
	CO3	To modify DNA sequences using adaptors and linkers	
	CO4	To analyse different techniques in rDNA technology	
Enzymes	CO1	To describe the basic concepts of enzymes	
	CO2	To describe the structure function and mechanism of action of enzymes.	
	CO3	To list out the kinetics of enzyme catalyzed reactions	
	CO4	To describe the applications of enzymes.	
	CO1	To analyse the physiological response in bacteria to various environmental conditions	
	CO2	To evaluate various metabolic pathways utilised by microorganisms for meeting energy requirements	

	Semester II		CO3	To know the metabolic pathways of lipids ,proteins and nucliec acids.				
		Microbial Physiology and Metabolism	CO4	To know w the energy yielding mechanisms .				
				to perform cultural, biochemical techniques to identify the organisms				
				to perform immunological techniques				
		Laboratory course II		to perform basic techniques in molecular technology				
				to understand the cultural trechniques of microbiology				
	Semester III							
			COURSE NAME		Course Outcomes			
			Food and Industrial Microbiology	CO1	To explain contamination , spoilage and production of foods			
				CO2	To design methods fro production of substances of industrial importance			
				CO3	To isolate, improve and preserve microorganisms of industrial importance			
				CO4	To design a fermentor and evaluate various fermentation processes			
			Environmental and Agricultural Microbiology	CO1	to know the benefical and harmful role of microorganismsin agricultural.			
				CO2	understand various biogeochemical pathways			
				CO3	to know the plant microbe interactions			
				CO4	to recognize the pollutions in the environment			
			Marine Microbiology	CO1	Understand the marine ecosystem and familiarize the structure and various habit of marine environment			
				CO2	Comprehend water borne diseases and water borne pathogens			
				CO3	Understand various biotechnology application of marine Microbiolgy such as biosensors, biosurfactant etc			
				CO4	Realize marine pollution and control measures, bio-corrosion and bioremediation			
			Microbial Quality Assurance, Biosafety	CO1	To comprehend the basic issues of bioethics			
				CO2	To recognize safety concerns and ethical issues on application of Biotechnology.			
				CO3	To list the current food safety programs.			
				CO4	To describe the basic concepts of IPR			
			Laboratory Course III	CO1	to understand food microbiology techniques			
				CO2	to perform bacteriological analysis of milk.			
				CO3	to perform quality analysis of water			
				CO4	to know about air microorganisms			
		COURSE NAME		Course Outcomes				
		Systematic Bacteriology	CO1	to know the virulence of microorganism				
			CO2	to understand the bacteria causing diseases.				
			CO3	to learn the pathogenesis of bacterias				
			CO4	to learn the treatment method of bacterial infections				
		Medical Virology, Mycology and Prot	CO1	To describe the role of viruses in causing diseases				
			CO2	To understand the basic methods adopted for the diagnosis of viral infections				
			CO3	To evaluate various kinds of infections caused by fungi				
			CO4	To evaluate the medically important protozoans				
			CO1	To comprehend the concept of safe microbiology				

	Semester IV		CO2	To elicit the infections if various organs and system of human body		
			CO3	To learn etiology, pathogenesis and laboratory diagnosis of local infection		
		Clinical Microbiology	CO4	To understand the antimicrobial therapy and prophylaxis		
			CO1	To learn standrad laboratory procedure in clinical microbiology		
			CO2	To understand how to handle and identify medically important bacteria		
		Laboratory Course III	CO3	To learn to culture, isolate and identify fungi		
			CO4	To understand and practices the procedure for viral cultivation		
		Project and viva	CO1	Research on various topics as per the expertise and facilities available in the department (and with other		
			CO2	An overall study on the concerned plant/animal/microbial system addressing any of relevant and pursuable		
			CO3	Familiarization with good laboratory practices, data presentation, thesis writing etc.		