

Shri Swami Vivekanand Shikshan Sanstha's

Vivekanand College, Kolhapur

(An Empowered Autonomous Institute)

Department of Microbiology (PG)

Academic Year 2025-26

M. Sc. II

Course outcomes

	Semester III
DSC20MIC31	AGRICULTURAL MICROBIOLOGY AND PHYTOPATHOLOGY
	CO 1 Understand scope of agricultural Microbiology and microflora of soil and their importance in agricultural Microbiology CO 2 Know about biofertilizers and biopesticides CO 3 Describe various plant diseases and their control CO 4 Explain interactions of plants pathogens with host and defense mechanisms in plants
DSC20MIC32	ENZYMOLGY AND ENZYME TECHNOLOGY
	CO 1 Explain history, properties, classification, structure, and specificity of enzymes CO 2 Describe enzyme kinetics CO 3 Elucidate structural modifications and types of enzymes CO 4 Narrate various applications of enzymes
DSE20MIC31	QUALITY CONTROL MICROBIOLOGY –I
	CO 1 Describe fermentation equipment and its uses CO 2 Explain fermentation economics and patents CO 3 Explain control of different metabolic pathways, Contamination and computer applications in fermentation technology CO 4 Produce vitamins, organic acids, beverages, and vaccines
DSE20MIC32	FERMENTATION TECHNOLOGY



	<p>CO 1 Evaluate biosafety levels of laboratories</p> <p>CO 2 Explain good microbiological laboratory techniques</p> <p>CO 3 Describe various techniques of microbial control</p> <p>CO 4 Explain biosafety guidelines</p>
DSE20MIC33	BIOSTATISTICS, BIOINFORMATICS AND SCIENTIFIC WRITING
	<p>CO 1 Describe the method to collect samples, design the experiments, apply the measures of central tendency</p> <p>CO 2 Explain the concept of hypothesis testing, ANOVA, correlation and regression</p> <p>CO 3 Describe components, objectives, and applications of bioinformatics</p> <p>CO 4 Construct scientific documents, present and publish research papers, acknowledge legal aspects of scientific authorship</p>
	Semester IV
DSC20MIC41	FOOD AND DAIRY MICROBIOLOGY
	<p>CO 1 Write about food spoilage and various methods of food preservation</p> <p>CO 2 Prepare various Indian and western fermented foods</p> <p>CO 3 Describe different food borne disease, their preservation, and control</p> <p>CO 4 Explain role of enzymes in food processing, various applications of enzymes, and Laws regarding food safety</p>
DSC20MIC42	INDUSTRIAL WASTE MANAGEMENT
	<p>CO 1 Explain types and characteristics of industrial wastes</p> <p>CO 2 Write Microbiology and biochemistry of wastewater treatment</p> <p>CO 3 Describe methods of industrial waste treatment</p> <p>CO 4 Explain biological methods of industrial waste</p>
DSE20MIC41	RECOMBINANT DNA TECHNOLOGY
	CO 1 Explain basic tools of recombinant DNA technology



	CO 2 Describe basic cloning strategies CO 3 Describe cloning procedure in eukaryotes CO 4 Explain various applications of DNA technology
DSE20MIC42	QUALITY CONTROL MICROBIOLOGY-II
	CO 1 Describe regulatory affairs concerning pharmaceutical drug CO 2 Explain cleanrooms classification, contamination, testing, and microbiological environmental monitoring CO 3 Determine bioburden of finished products CO 4 Explain quality management systems in pharmaceutical
DSE20MIC43	ENVIRONMENTAL MICROBIOLOGY
	CO 1 Understand developments in the field of environmental microbiology with special emphasis on the role of microbes in mitigating environment pollution. CO 2 Acquaint with various cultural, biochemical and molecular techniques used in understanding microbial diversity CO 3 Understand the role of microbes in management of waste plant biomass CO 4 Understand the role of microbes in bioremediation of environmental pollutants like petroleum hydrocarbons, pesticides, plastic and electronic waste; also understands



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