

VIVEKANAD COLLEGE KOLHAPUR (EMPOWERED AUTONOMOUS INSTITUTE)

STATEMENT OF SYLLABUS COVERED

Year- 2024-25

Term1-2

Name of Teacher – Dr.S.B.Mulla

Department – Biotechnology Optional

Class	Subject	Syllabus assigned	Syllabus Covered	Syllabus not to covered	Remark
Term -1					
B.Sc.I	Fundamentals of Biotechnology	Unit1 - Scope of Biotechnology Unit2 – Carbohydrates Unit -3 Protein Unit-4 Lipids Related Practicals	Unit1 - Scope of Biotechnology Unit2 – Carbohydrates Unit -3 Protein Unit-4 Lipids Related Practicals	-	-
B.Sc II	Fundamentals of enzyme technology	Unit -1 Basic of enzymes Factors affecting enzyme activity Unit 2- Enzyme kinetics and regulation Reversible inhibition Unit3- Types of enzyme Unit 4- Immobilization types and application and Biosensor instrumentation and types of Biosensor Related practical	Unit -1 Basic of enzymes Factors affecting enzyme activity Unit 2 Enzyme kinetics and regulation Reversible inhibition Unit3- Types of enzyme Unit 4- Immobilization types and application and Biosensor instrumentation and types of Biosensor Related practical	-	-

Class	Subject	Syllabus assigned	Syllabus Covered	Syllabus not to covered	Remark
Term -2					
B.Sc.III	Advances in Biotechnology -1	Unit1- Spectroscopy Chromatography Unit2- Tracer technique Electrophoresis Related practicals	Unit1- Spectroscopy Chromatography Unit2- Tracer technique Electrophoresis Related practicals	--	
B.Sc.III	Cell metabolism and virology	Unit 1- Basics of Metabolism Carbohydrate metabolism ,Electron transport chain Lipid metabolism Unit 2- Protein metabolism Nucleic acid metabolism Virology- reproduction of viruses , properties and cultivation of plant and animal viruses Related practicals and project	Unit 1- Basics of Metabolism Carbohydrate metabolism ,Electron transport chain Lipid metabolism Unit 2- Protein metabolism Nucleic acid metabolism Virology- reproduction of viruses , properties and cultivation of plant and animal viruses Related practicals and project		



Signature of Head of Department

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DEPARTMENT OF BIOTECHNOLOGY (OPTIONAL)
VIVEKANAND COLLEGE, KOLHAPUR
"EMPOWERED ALTERNATIVE"




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STATEMENT OF SYLLABUS COVERED

Year- 2024-25

Term1-2

Name of Teacher – Ms.D.A. Wajantri

Department – Biotechnology Optional

Class	Subject	Syllabus assigned	Syllabus Covered	Syllabus not to covered	Remark
Term -1					
B.Sc.I	Fundamentals of Biotechnology II	Unit1 - Cell disruption method Unit2 – Centrifugation Unit -3 Microscopy Unit-4 Spectroscopy and colorimetry sterilization	Unit1 - Cell disruption method Unit2 – Centrifugation Unit -3 Microscopy Unit-4 Spectroscopy and colorimetry sterilization	-----	
B.Sc.III	Large scale Manufacturing process -1	Unit 1- Concept of Bioprocess engineering Unit2- Types of fermentation Scale up Downstream processing Use of computers in fermentation Qualitative and Quantitative assays	Unit 1- Concept of Bioprocess engineering Unit2- Types of fermentation Scale up Downstream processing Use of computers in fermentation Qualitative and Quantitative assays		
B.Sc.II	VSC practicals	Techniques in serology	Techniques in serology		

Class	Subject	Syllabus assigned	Syllabus Covered	Syllabus not to covered	Remark
Term -2					
B.Sc.I-	Microbiology	Unit 1-History of Microbiology Unit-2Morphology and cytology Unit3-Culture media and Pure culture techniques Unit -4Stains and staining procedure Related practical	Unit 1-History of Microbiology Unit-2Morphology and cytology Unit3-Culture media and Pure culture techniques Unit -4Stains and staining procedure Related practical	-	
B.Sc.III	Environmental Biotechnology	Unit -1Conventional and non conventional fuels and environmental impact Waste water treatment Unit 2 Bioremediation Bioleaching Bio fertilizer Related Practical and project	Unit -1Conventional and non conventional fuels and environmental impact Waste water treatment Unit 2 Bioremediation Bioleaching Bio fertilizer Related Practical and project	-	
B.Sc.II	Immunology Practical	Techniques in immunology allotted	Techniques in immunology completed		

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STATEMENT OF SYLLABUS COVERED

Year- 2024-25

Term1-2

Name of Teacher – Ms. K.V.Kadam

Department – Biotechnology Optional

Class	Subject	Syllabus assigned	Syllabus Covered	Syllabus not to covered	Remark
Term -1					
B.Sc.III	Animal Tissue Culture	Unit 1- History and Requirement sterilization of glassware , equipment and culture media Unit2- Concepts in ATC Basic techniques of mammalian cell culture, Organ and Histotypic culture Related practicals	Unit 1- History and Requirement sterilization of glassware , equipment and culture media Unit2- Concepts in ATC Basic techniques of mammalian cell culture, Organ and Histotypic culture Related practicals	-----	
B.Sc.III	Large scale Manufacturing process -1	Unit 1- Production of primary metabolites, secondary metabolites, Fermented foods. Microbial biomass production Unit2- Production of r-products – IPR fermentation economics GMP . QC and QA Biosafety level I II III related practical ,project	Unit 1- Production of primary metabolites, secondary metabolites, Fermented foods. Microbial biomass production Unit2- Production of r-products – IPR fermentation economics GMP . QC and QA Biosafety level I II III related practical ,project		
B.Sc.II	VSC practicals	Techniques in serology	Techniques in serology		

Class	Subject	Syllabus assigned	Syllabus Covered	Syllabus not to covered	Remark
Term -2					
B.Sc.I-	Basics of Cell biology and genetics	Unit 1-History of cell biology Unit- Ultra structure and function of cell organelles Unit3- Classical genetics Unit -4 Chromosome Related practical	Unit 1-History of cell biology Unit- Ultra structure and function of cell organelles Unit3- Classical genetics Unit -4 Chromosome Related practical	-	
B.Sc.II	Fundamentals of Immunotechnology	Unit1- Introduction to immunology Unit2- Organs of immunsystem Unit3-Antigen and Antibodies Unit 4- Antigen and antibody reaction	Unit1- Introduction to immunology Unit2- Organs of immunsystem Unit3- Antigen and Antibodies Unit 4- Antigen and antibody reaction	-	
B.Sc.II	VSCPactical	Techniques in forensic sciences	Techniques in forensic sciences	-	



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Year- 2024-25

Term1-2

Name of Teacher – Ms. S.D. Potdar

Department – Biotechnology Optional

Class	Subject	Syllabus assigned	Syllabus Covered	Syllabus not to covered	Remark
Term -1					
B.Sc.II	Fundamentals of Molecular Biology	Unit1 - Concept of nucleic acid DNA replication in prokaryotes and Eukaryotes Unit2 – Genetic code properties Transcription Unit -3 Translation in Prokaryotes and Eukaryotes Unit-4 Gene regulation and Mutation , related practicals	Unit1 - Concept of nucleic acid DNA replication in prokaryotes and Eukaryotes Unit2 – Genetic code properties Transcription Unit -3 Translation in Prokaryotes and Eukaryotes Unit-4 Gene regulation and Mutation , related practicals	-----	
B.Sc.III	Plant tissue culture	Unit 1- Concept and historical background of PTC Unit2 – Types of cultures Callus. Somatic embryogenesis suspension culture, Haploid culture Clonal propagation and organogenesis Protoplast culture and applications of plant tissue culture Related practical			

Class	Subject	Syllabus assigned	Syllabus Covered	Syllabus not to covered	Remark
Term - 2					
B.Sc.II-	Fundamentals of Genetic engineering	Unit 1- Introduction GE Unit-2 Cloning vectors Unit3- DNA sequencing techniques Unit -4 PCR and types of PCR Related practical	Unit 1- Introduction GE Unit-2 Cloning vectors Unit3- DNA sequencing techniques Unit -4 PCR and types of PCR Related practical	-	
B.Sc.III	Gene technology and Bioinformatics	Unit 1 –DNA fingerprinting, Generating, Chromosomal waking , jumping Antisense therapy Unit 2- Bioinformatics database genomics proteomics and Human genome project Related practicals and project	Unit 1 –DNA fingerprinting, Generating, Chromosomal waking , jumping Antisense therapy Unit 2- Bioinformatics database genomics proteomics and Human genome project Related practicals and project	-	

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