

VIVEKANAD COLLEGE KOLHAPUR (EMPOWERED AUTONOMOUS INSTITUTE)

STATEMENT OF SYLLABUS COVERED

Year- 2025-26

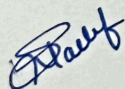
Term1-2

Name of Teacher – Dr.S.B.Mulla

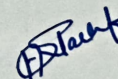
Department – Biotechnology Optional

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.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.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 Teacher

Signature of Head of Department

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DEPARTMENT OF BIOTECHNOLOGY (OPTIONAL),
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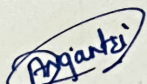
Term1-2

Name of Teacher – Ms.D.A. Wajantri

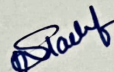
Department – Biotechnology Optional

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	Fermentation technology -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	Fermentation technology -2	Unit 1- Production of primary metabolites, secondary metabolites, Unit-2Fermented foods. Microbial biomass production Unit2- Production of r-products Unit3-IPR fermentation economics Unit4- GMP . QC and QA Biosafety level I II III related practical ,project	Unit 1- Production of primary metabolites, secondary metabolites, Unit-2Fermented foods. Microbial biomass production Unit2- Production of r-products Unit3-IPR fermentation economics Unit4- GMP . QC and QA Biosafety level I II III related practical! ,project	-	
B.Sc.II	Immunology Practical	Techniques in immunology allotted	Techniques in immunology completed		


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Year- 2025-26

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	Biochemical techniques	Unit1- Spectroscopy Unit2- Chromatography Unit3-Electrophoresis Unit4- Tracer technique Related practicals	Unit1- Spectroscopy Unit2- Chromatography Unit3-Electrophoresis Unit4- Tracer technique Related practicals	-----	
B.Sc.III	Environmental Biotechnology	Unit -1Conventional and non conventional fuels and environmental impact Unit -2Waste water treatment Unit 3- Bioremediation Bioleaching Unit-4 Bio fertilizer Related Practical and project	Unit -1Conventional and non conventional fuels and environmental impact Unit -2Waste water treatment Unit 3- Bioremediation Bioleaching Unit-4 Bio fertilizer Related Practical and 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.III	Animal Tissue Culture	Unit 1- History and Requirement sterilization of glassware , equipment and Unit2-culture media Unit3- Concepts in ATC Basic techniques of mammalian cell culture, Unit4- Organ and Histotypic culture Related practicals	Unit 1- History and Requirement sterilization of glassware , equipment and Unit2-culture media Unit3- Concepts in ATC Basic techniques of mammalian cell culture, Unit4- Organ and Histotypic culture Related practicals	-	
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		

M. Adarsh
Signature of Teacher



P. S. Jadhav
Signature of Head of Department

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Year- 2025-26

Term1-2

Name of Teacher – Ms. S.S. Jitakar

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,	Unit 1- Concept and historical background of PTC Unit2 – Types of cultures Callus. Somatic embryogenesis suspension culture,		

		Unit3-Haploid culture Clonal propagation and Unit4- organogenesis Protoplast culture and applications of plant tissue culture Related practical	Unit3-Haploid culture Clonal propagation and Unit4- organogenesis Protoplast culture		
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 3- Bioinformatics database Unit 4genomics proteomics and Human genome project Related practicals and project	Unit 1 –DNA fingerprinting, Generating, Chromosomal waking , jumping Antisense therapy Unit 3- Bioinformatics database Unit 4genomics proteomics and Human genome project Related practicals and project	-	

S. S. Dikam

Signature of Teacher



H. S. S. S.

Signature of Head of Department

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