

Annual Teaching Plan

Academic Year: 2023 -24 Semester : V (B.Sc.III)

Department: Microbiology

Subject: Microbiology Course Title: DSE:1010E1 IMMUNOLOGY

Name of the teacher – Ms.V.V.Misal .

Month : July			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Paper : IX Unit I	1.Cells of Immune system – 2. Membrane receptors for antigen and their role in antigen recognition Practical Course I
12	8	20		
Month : August			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Unit I	1. Molecular mechanism of antibody production. 2. Cytokines 3. Immunological tolerance : 4. Interferon Practical Course I
12	8	20		
Month : September			Module/Unit:	Sub-units planned
12	8	20	Unit II	1. Complement 2. Monoclonal antibodies Practical Course I
Month : October			Module/Unit:	Sub-units planned
12	8	20	Unit II	1. New diagnostic techniques 2. Hypersensitivity 3. Autoimmune disease Practical Course I

Name and Signature of Teacher

Name and Signature of HoD

Ms. V. V. Misal

Ms. Vrushali V. Misal

Dr. G. K. Sontakke

Dr. G. K. Sontakke
Incharge Head
Department Of Microbiology
Vivekanand College, Kolhapur.
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Annual Teaching Plan

Academic Year: 2023-24 Semester: VI (B.Sc.III) Department: Microbiology

Subject: Microbiology Course Title: DSE:1010F1 MICROBIAL GENETICS

Name of the teacher – Ms.V.V.Misal

Month : December			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Paper : XIV Unit I	1. One cistron - one polypeptide hypothesis. 2. Molecular mechanism of gene expression Practical Course I
12	8	20		
Month : January			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Unit I	1. Mutations 2. Methods of isolation and detection of mutants based on – a. Relative survival b. Relative growth c. Visual detection
12	8	20		
Month : March			Module/Unit:	Sub-units planned
12	8	20	Unit II	1. Genetic complementation 2. Extrachromosomal inheritance:
Month : April				
12	8	20	Unit II	Techniques in Molecular Biology – Genetic engineering

Name and Signature of Teacher

Ms. Vrushali V. Misal

Name and Signature of HoD

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Annual Teaching Plan

Academic Year: 2023-24

Semester: I (B.Sc.I)

Department: Microbiology


Subject: Microbiology

Course Title: DSC 03MIC12 : Bacteriology

Name of the teacher – Ms.V.V.Misal

Month : July			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Paper II Unit I	A. General Principles of Microscopy : 1. Types of microscopes: a) light microscopes b) electron microscopes, 2.Light microscopy: a)Parts b)Image formation c)Magnification d)Numerical aperture e)Resolving power f) Working distance
5	8	13		
Month : August			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Paper II Unit I	2. Ray diagram, special features and applications of : a) Compound Microscope b) Phase Contrast Microscope c) Electron Microscope d) Fluorescence Microscope Practical course I
5	8	13		
Month : September			Module/Unit:	Sub-units planned
5	8	13	Paper II Unit I	B. Stains and Staining procedures 1. Definition of dye and stain 2. Classification of stains – Acidic, Basic and Neutral 3. Principles, Procedure, Mechanism of staining procedures a) Monochrome staining b) Negative staining c) Differential staining : i) Gram's staining ii) Acid fast staining Practical course I
Month : October			Module/Unit:	Sub-units planned
5	8	13	Paper II Unit I	Special staining methods a) Cell wall (Chance's method) b) Capsule (Manvel's method) c) Volutin granule (Albert's method) Practical course I

Name and Signature of Teacher


Ms. Vrushali V. Misal



Name and Signature of HoD


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Annual Teaching Plan

Academic Year: 2023-24

Semester: II (B.Sc.I)

Department: Microbiology

Subject: Microbiology


Course Title: DSC03MIC22 Microbial Nutrition and Techniques


Name of the teacher – Ms.V.V.Misal

Month : December			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Paper IV Unit II	Microbial Nutrition & Technique A. Microbial Nutrition : i) Nutritional requirement of microorganism ii) Concept of auxotroph Prototroph and fastidious organisms based on growth factor.
5	8	13		
Month : January			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Paper IV Unit II	A. Microbial Nutrition: iii) Nutritional types of microorganism based on carbon and energy source.
5	8	13		
Month : February			Module/Unit:	Sub-units planned
5	8	13	Paper IV Unit I	B. Culture Media : i) Components of Media ii)Types of Media based on – Physical state Chemical nature Function
Month : March			Module/Unit:	Sub-units planned
5	8	13	Paper IV Unit I	C. Cultivation of Microorganisms i) Use of culture media for cultivation ii) Conditions required for growth of Microorganisms

Name and Signature of Teacher

Name and Signature of HoD


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Annual Teaching Plan

Academic Year: 2023-24 Semester: III (B.Sc.II)


Department: Microbiology

Subject: Microbiology Course Title: DSC 1010 C : Microbial Physiology and Metabolism

Name of the teacher – Ms.V.V.Misal

Month : July			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Paper V Unit II	A . Basic concepts metabolism. 1. Catabolism of glucose.
6	8	14		
Month : August			Module/Unit:	
Lectures	Practicals	Total	Paper III Sec II, Unit IV	2. EMP , HMP and ED pathway
6	8	14		
Month : September			Module/Unit:	
6	8	14	Paper III Sec II, Unit IV	TCA cycle B. Fermentation – Homolactic and heterolactic fermentation
Month : October			Module/Unit:	
6	8	14	Paper III Sec II, Unit IV	C. Bacterial Electron transport chain - a. Components, flow of electrons and mechanism.o ATP generation.

Name and Signature of Teacher



Ms.Vrushali V.Misal

Name and Signature of HoD



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Annual Teaching Plan

Academic Year: 2022-23

Semester: IV (B.Sc.II)

Department: Microbiology

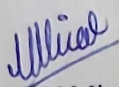
Subject: Microbiology

Course Title: MICROBIAL GENETICS, MOLECULAR BIOLOGY


Name of the teacher – Ms.V.V.Misal

Month : December			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Paper VII Unit II	Microbial Genetics A. Basic concepts of Genetics. 2. Forms of DNA.
5	8	13		
Month : January			Module/Unit:	
Lectures	Practicals	Total	Paper VII Unit II	3. Genetic code – 4. Organization of chromosomal DNA in <i>E.Coli</i>
5	8	13		
Month : February			Module/Unit:	
5	8	13	Paper VII Unit I	B. Mutation i) Basic concept of mutation ii) Spontaneous mutation
Month : March			Module/Unit:	
5	8	13	Paper VII Unit I	Mutagens that distort DNA a) acridine dyes b) UV Light

Name and Signature of Teacher


Ms. Vrushafi V. Misal

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Annual Teaching Plan

Academic Year: 2023-2024

Semester: B.Sc I Sem I

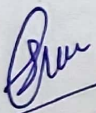
Department: Microbiology


Subject: Microbiology

Course Title: Introduction to Microbiology

Name of the teacher: Mr. Suraj D. Gabale

Month: July			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Paper I DSC03MIC 11 Unit I	1. History and milestones in Microbiology a. Spontaneous generation vs biogenesis b. Contributions of scientists
5	2	7		
Month: August			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Paper I DSC03MIC 11 Unit I	1. History and milestones in Microbiology a. Beneficial and harmful activities of Microorganisms b. Classification of organisms
5	2	7		
Month: September			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Paper I DSC03MIC 11 Unit I	3. Bacterial systematic a. Taxonomic ranks b. Bacterial nomenclature
5	2	7		
Month: October			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Paper I DSC03MIC 11 Unit I	4. Types of Microorganisms
5	2	7		


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Annual Teaching Plan

Academic Year: 2023-2024

Semester: B.Sc I Sem II

Department: Microbiology

Subject: Microbiology

Course Title: Basic Biochemistry

Name of the teacher: Mr. Suraj D. Gabale

Month: December			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Paper IV DSC03MIC 24 Unit I	Basic Biochemistry: 1. Lipids: a. Simple lipids b. Compound lipids c. Derived lipids
5	2	7		
Month: January			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Paper IV DSC03MIC 24 Unit I	2. Enzymes: a. Definition and types b. Structure c. Mechanism of action
5	2	7		
Month: February			Module/Unit:	Sub-units planned
5	2	7	Paper IV DSC03MIC 24 Unit I	3. Nucleic acid: a. DNA structure and functions
Month: March			Module/Unit:	Sub-units planned
5	2	7	Paper IV DSC03MIC 24 Unit I	b. RNA: Types, structure and functions



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Annual Teaching Plan

Academic Year: 2023-2024

Semester: B.Sc II Sem III

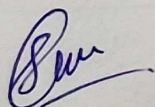
Department: Microbiology

Subject: Microbiology

Course Title: Industrial and Applied Microbiology

Name of the teacher: Mr. Suraj D. Gabale

Month: July			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Paper VI DSC 1010 C2 Unit II	A) Air Microbiology a. Sources of Microorganisms b. Definitions c. Sampling methods
6	2	8		
Month: August			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Paper VI DSC 1010 C2 Unit II	B) Bioinstrumentation a. Electrophoresis b. UV-visible spectrophotometer
6	2	8		
Month: September			Module/Unit:	Sub-units planned
6	2	8	Paper VI DSC 1010 C2 Unit II	C) Biostatistics a. Introduction b. Data presentation c. Central tendency d. Applications
Month: October			Module/Unit:	Sub-units planned
6	2	8	Paper VI DSC 1010 C2 Unit II	D) Bioinformatics a. Introduction to basic terminologies b. Applications



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Annual Teaching Plan

Academic Year: 2023-2024

Semester: B.Sc II Sem IV


Department: Microbiology


Subject: Microbiology

Course Title: Basics in Medical Microbiology & Immunology

Name of the teacher: Mr. Suraj D. Gabale

Month: December			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Paper VIII DSC 1010 D2 Unit II	IMMUNOLOGY 1. Immunity 2. Non-specific defense mechanism
6	2	8		
Month: January			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Paper VIII DSC 1010 D2 Unit II	3. Antigens a. Chemical nature b. Types c. factors affecting antigenicity 4. Antibodies
6	2	8		
Month: February			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Paper VIII DSC 1010 D2 Unit II	5. Theories of antibody production 6. Immune response
6	2	8		
Month: March			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Paper VIII DSC 1010 D2 Unit II	7. Mechanism of Ag-Ab reaction 8. Types of Ag-Ab reactions 9. Types of immune response 10. Organs of Immune system
6	2	8		


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6



Annual Teaching Plan

Academic Year: 2023-2024

Semester: B.Sc III Sem V

Department: Microbiology

Subject: Microbiology

Course Title: Immunology and Clinical Microbiology

Name of the teacher: Mr. Suraj Dipak Gabale

Month: July			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Paper X DSE 1010 E1 Unit I	1. <i>Mycobacterium leprae</i> 2. <i>Clostridium perfringenes</i> 3. <i>Treponema pallidum</i> .
12	4	16		
Month: August			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Paper X DSE 1010 E1 Unit II	1. <i>Pseudomonas aeruginosa</i> 2. <i>Vibrio choleare</i> 3. <i>Helicobacter pylori</i> 4. <i>Leptospira interrogans</i>
12	4	16		
Month: September			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Paper X DSE 1010 E1 Unit III	1. <i>Plasmodium falciparum</i> 2. <i>Candida albicans</i> 3. Dengue virus 4. Hepatitis A and B virus 5. Rabies virus 6. SARS virus
12	4	16		
Month: October			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Paper X DSE 1010 E1 Unit IV	1. Chemotherapy 2. Gene therapy 3. Antimicrobial chemoprphylaxis 4. Drug resistance 5. Vaccines
12	4	16		



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Annual Teaching Plan

Academic Year: 2023-2024

Semester: B.Sc III Sem VI

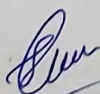
Department: Microbiology

Subject: Microbiology

Course Title: Virology and Microbial Genetics

Name of the teacher: Mr. Suraj D. Gabale

Month: December			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Paper XIII DSE 1010 F1 Unit I	1. General characteristics of Viruses 2. One step growth experiment 3. Viroids 4. Prions 5. Capsid, envelope and nucleic
12	4	16		
Month: January			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Paper XIII DSE 1010 F1 Unit II	1. Isolation and cultivation of a. Bacteriophages b. Animal viruses c. Plant viruses 2. Enumeration of viruses 3. Purification of viruses
12	4	16		
Month: February			Module/Unit:	Sub-units planned
12	4	16	Paper XIII DSE 1010 F1 Unit III	Multiplication cycles of- a. Adenoviruses b. TMV c. Lambda phage d. T4 bacteriophage
Month: March			Module/Unit:	Sub-units planned
12	4	16	Paper XIII DSE 1010 F1 Unit IV	1. Types of cancer cells 2. Types of cancer 3. Oncogenic viruses 4. Hypothesis about cancer



Mr. S. D. Gabale



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Annual Teaching Plan

Academic Year: 2023-2024

Semester: B.Sc I Sem I

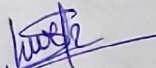
Department: Microbiology

Subject: Microbiology

Course Title: Introduction to microbiology

Name of the teacher: Ms. S. A.Pise

Month: July			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Paper I DSC03MIC 11 Unit II	Bacterial cell organization 1. Cell size, shape & arrangement 2. Cytology of bacteria a. cell wall b. cell membrane c. capsule & slime layer
5	2	7		
Month: August			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Paper I DSC03MIC 11 Unit II	d. flagella & pili e. Ribosomes f. Mesosomes
5	2	7		
Month: September			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Paper I DSC03MIC 11 Unit II	g. Inclusion bodies h. Nucleoid, chromosome & plasmid i. Endospore
5	2	7		
Month: October			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Paper I DSC03MIC 11 Unit II	3. reserved food material a. nitrogenous b. non-nitrogenous
5	2	7		


Ms. S. A. Pise


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Annual Teaching Plan

Academic Year: 2023-2024

Semester: B.Sc I Sem II


Department: Microbiology


Subject: Microbiology

Course Title: Basic biochemistry

Name of the teacher: Ms. S. A. Pise

Month: December			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Paper III DSC 03MIC24	Protein 1. Introduction to amino acids & peptide bonds
5	2	7	Unit 1	
Month: January			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Paper III DSC 03MIC24	2. Types of Amino acids based on R group 3. Structural levels of proteins
5	2	7	Unit 1	
Month: February			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Paper III DSC 03MIC24	Enzyme 1. Definition & types of enzymes 2. Concept of apoenzyme, coenzyme, cofactor & active site
5	2	7	Unit 1	
Month: March			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Paper III DSC 03MIC24	3. Mechanism of enzyme action
5	2	7	Unit 1	


Ms. S. A. Pise


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Annual Teaching Plan

Academic Year: 2023-2024

Semester: B.Sc II Sem III


Department: Microbiology

Subject: Microbiology

Course Title: Microbial Physiology & Metabolism .

Name of the teacher: Ms. S.A.Pise

Month: July			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Paper V DSC 1010C1 Unit 1	a.Growth
6	2	8		
Month: August			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Paper V DSC 1010C1 Unit 1	B .Effect of environmental factors on microbial growth i.Temperature ii.pH
6	2	8		
Month: September			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Paper V DSC 1010C1 Unit 1	iii.Osmotic pressure iv.Heavy metal v.Radiation
6	2	8		
Month: October			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Paper V DSC 1010C1s Unit 1	c.Transport across cell membrane
6	2	8		


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Annual Teaching Plan

Academic Year: 2023-2024

Semester: B.Sc II Sem IV


Department: Microbiology


Subject: Microbiology

Course Title: Microbial Genetics, Molecular Biology, Basics in Medical Microbiology & Immunology

Name of the teacher: Ms. S.A.Pise

Month: December			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Paper VII DSC1010D 1 Unit II	A.gene transfer in bacteria i.Fate of exogenote
6	2	8		
Month: January			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Paper VII DSC1010D 1 Unit II	ii.Modes of gene transfer a.transformation b.Conjugation c.Transduction
6	2	8		
Month: February			Module/Unit:	Sub-units planned
6	2	8	Paper VII DSC1010D 1 Unit II	b.DNA repair i.Photo reactivation ii.Dark repair mechanism
Month: March			Module/Unit:	Sub-units planned
6	2	8	Paper VII DSC1010D 1 Unit II	c.Plasmid


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Annual Teaching Plan

Academic Year: 2023-2024

Semester: B.Sc III Sem V

Department: Microbiology

Subject: Microbiology


Course Title: Industrial microbiology and microbial biochemistry

Name of the teacher: Ms. S. A.Pise

Month: July			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section II Unit I	1. Enzymes
12	4	16		
Month: August			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section II Unit I	1. Extraction & purification of enzymes. 2. Assay of enzymes - 3. Immobilization of enzymes 4. Confirmation of purified enzymes
12	4	16		
Month: September			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section II Unit II	1. Basic concepts of Glyoxylate bypass, Phosphoketolase pathway, Bioluminescence - 2. Assimilation of Carbon, Nitrogen, Sulphur
12	4	16		
Month: October			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section II Unit II	1. Prokaryotic Biosynthesis of RNA, DNA, Proteins, Peptidoglycan
12	4	16		


Ms. S.A.Pise




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Annual Teaching Plan

Academic Year: 2023-2024

Semester: B.Sc III Sem VI

Department: Microbiology

Subject: Microbiology

Course Title: Agricultural and Environmental microbiology

Name of the teacher: Ms. S. A. Pise

Month: December			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section I Unit I	1. Soil Microbiology. 2. Role of microorganisms inelemental cycle
12	4	16		
Month: January			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section I Unit I	1. . Manure and Compost
12	4	16		
Month: February			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section I Unit II	1. Types, production, methods of application and uses.
12	4	16		
Month: March			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section I Unit II	1. Biodegradation by bacteria & fungi 2. Plant Pathology
12	4	16		

Ms. S. A. Pise

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Annual Teaching Plan

Academic Year: 2023-24

Semester: I (B.Sc. I)

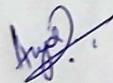
Department: Microbiology

Subject: Microbiology


Course Title: DSC03MIC12 Paper II Bacteriology

Name of the teacher: Ms. A. A. Jadhav

Month: AUGUST			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Paper II Unit II	Control of Microorganisms 1. Definitions 2. Mode of action and application of a) Physical agents: (i) Temperature (ii) Dessication
4	0	4		
Month: SEPTEMBER			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Paper II Unit II	a) Physical agents (iii) Ultrasonication (iv) Radiations (v) Filtration b) Chemical agents: (i) Phenol and phenolic compounds (ii) Alcohols
4	0	4		
Month: OCTOBER			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Paper II Unit II	b) Chemical agents: (iii) Halogen compounds (iv) Heavy metals (v) Fumigation by gaseous agents (vi) Osmotic Pressure
4	0	4		



Miss. A. A. Jadhav

Dr. G. K. Sontakke

Incharge Head

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Annual Teaching Plan

Academic Year: 2023-24

Semester: I (B.Sc. I)


Department: Microbiology

Subject: Microbiology

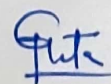
Course Title: DSC03MIC22 Paper II Bacteriology

Name of the teacher: Ms. A. A. Jadhav

Month: DECEMBER			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Paper IV Unit II	A. Enrichment and isolation of micro organisms from natural environment 1. Pure culture techniques 2. Isolation and cultivation of anaerobic organisms by using media components and by exclusion of air
4	0	4		
Month: JANUARY			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Paper IV Unit II	B. Preservation of microbial cultures: 1. Subculturing 2. Overlaying cultures with mineral oils 3. Storage at low temperature 4. Lyophilization
4	0	4		
Month: FEBRUARY			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Paper IV Unit II	C. Systematic study of pure cultures 1. Morphological characteristics 2. Cultural characteristics
4	0	4		
Month: MARCH			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Paper IV Unit II	C. Systematic study of pure cultures 3. Biochemical characteristics 4. Serological characteristics D. Concept of Culture Collection Centres
4	0	4		


Miss. A. A. Jadhav




Dr. G. K. Sontakke
Incharge Head
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(Autonomous)

Annual Teaching Plan

Academic Year: 2023-24

Semester: III (B.Sc. II)

Department: Microbiology

Subject: Microbiology

Course Title: Paper III Practical Course

Name of the teacher: Ms. A. A. Jadhav

Month: AUGUST			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Paper III Practical Course	1. Micrometry 2. Stains and staining procedures
0	32	32		
Month: SEPTEMBER			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Paper III Practical Course	3. Preparation of media 4. Biochemical tests: (i) Gelatin hydrolysis (ii) Amino acid decarboxylation test (iii) Amino acid deamination test (iv) Arginine hydrolysis test
0	32	32		
Month: OCTOBER			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Paper III Practical Course	4. Biochemical tests: (v) Urea hydrolysis test (vi) Nitrate reduction test (vii) Hugh & Leifsons test (viii) Oxidase test (ix) Lecithinase test
0	32	32		

A.A.J.

Miss. A. A. Jadhav



G.K.S.

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Annual Teaching Plan

Academic Year: 2023-24

Semester: III (B.Sc. II)

Department: Microbiology

Subject: Microbiology

Course Title: Paper IV Practical Course

Name of the teacher: Ms. A. A. Jadhav

Month: DECEMBER			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Paper IV Practical Course	1. Effect of environmental factor on micro organisms: 2. Primary Screening of: (i) Antibiotic producers (ii) Amylase Producers
0	32	32		
Month: JANUARY			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Paper IV Practical Course	3. Isolation and identification of pathogenic micro organisms from clinical sample (i) <i>Salmonella</i> spp. (ii) <i>S. aureus</i> (iii) <i>Proteus</i> spp. 4. Determination of blood groups – ABO and Rh
0	32	32		
Month: FEBRUARY			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Paper IV Practical Course	5. Determination of growth phase of <i>E. coli</i> by Optical density 6. Study of Diauxic growth
0	32	32		
Month: MARCH			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Paper IV Practical Course	7. Serological tests- Widal test- Qualitative Slide Test 8. Biostatistics 9. U.V. Survival Curve
0	32	32		



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Academic Year: 2023-24

Semester: V (B.Sc. III)

Department: Microbiology


Subject: Microbiology

Course Title: DSE 1010E2 -Paper VI- Industrial Microbiology and Microbial Biochemistry


Practical II Food and Industrial Microbiology

Name of the teacher: Ms. A. A. Jadhav

Month: AUGUST			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Paper VI Unit II	1. Industrial Production of a) Amylase b) Grape wine c) Penicillin d) Citric Acid e) SCP by using yeast Practical: Bioassay of Vitamin B12
8	40	48		
Month: SEPTEMBER			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Paper VI Unit II	2. Microbial Production of: a) Vitamin B12 b) Lysine amino acid 3. Probiotics 4. Downstream processing and product recovery a) Centrifugation b) Flocculation c) Filtration Practical: Bioassay of Penicillin
8	40	48		
Month: OCTOBER			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Paper VI Unit II	4. Downstream processing and product recovery d) Solvent extraction e) Distillation f) Precipitation g) Crystallization h) Chromatography 5. Testing of sterility, pyrogen, carcinogenicity, toxicity and allergens Practical As per syllabus
8	40	48		


Miss. A. A. Jadhav




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Annual Teaching Plan

Academic Year: 2023-24

Semester: III (B.Sc. II)

Department: Microbiology

Subject: Microbiology Course Title: DSC-1010C: PAPER VI: Industrial & Applied Microbiology

Name of the teacher: Ms.N.R.JADHAV

Month: AUGUST			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Paper VI Unit I	a) Basic concept of fermentation- i) Definition ii) Types of fermentations iii) Typical fermentor design Practical- as per syllabus
4	32	36		
Month: SEPTEMBER			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Paper VI Unit I	A) iv) Factors affecting fermentation process. B) fermentation media Practical- as per syllabus
4	32	36		
Month: OCTOBER			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Paper VI Unit I	C) screening- i) Types of screening ii) Primary screening iii) Secondary screening Practical- as per syllabus
4	32	36		

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Ms. Nikita Ramchandra Jadhav.



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Annual Teaching Plan

Academic Year: 2023-24

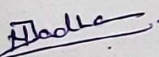
Semester: IV (B.Sc. II)

Department: Microbiology


Subject: Microbiology Course Title: DSC-1010D1: PAPER VIII: Basics in Medical Microbiology & Immunology

Name of the teacher: Ms.N.R.JADHAV

Month: December			Module/Unit:	Sub-units planned
Lectures	Practical	Total	Paper VIII Unit I –Medical Microbiology	Medical Microbiology A) Definition B) Virulence factor C) Types of infections Practical- as per syllabus
4	32	36		
Month: JANUARY			Module/Unit:	Sub-units planned
Lectures	Practical	Total	Paper VIII Unit I- Medical Microbiology	D)Types of diseases- i) Epidemic ii) Endemic iii) Pandemic iv) Sporadic E)Mode of transmission of diseases – I) Air – borne transmission Practical- as per syllabus
4	32	36		
Month: FEBRUARY			Module/Unit:	Sub-units planned
Lectures	Practical	Total	Paper VIII Unit I- Medical Microbiology	E)Mode of transmission of diseases – ii) Vehicle transmission iii)Contact transmission iv) Vector borne transmission Practical- as per syllabus
4	32	36		
Month: March			Module/Unit:	Sub-units planned
Lectures	Practical	Total	Paper VIII Unit I- Medical Microbiology	F) General principle of prevention & control of microbial diseases G) Normal flora of human body & it's significance Practical- as per syllabus
4	32	36		


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Academic Year: 2023-24

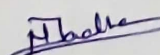
Semester: V (B.Sc. III)

Department: Microbiology


Subject: Microbiology Course Title: DSE-1010E2: PAPER XI: Industrial Microbiology & Microbial Biochemistry

Name of the teacher: Ms.N.R.JADHAV

Month: AUGUST			Module/Unit:	Sub-units planned
Lectures	Practical	Total	Paper XI Unit I	
8	40	48		1. Food Microbiology a. Food as a substrate for Microorganism b. Food borne diseases- i. Role of organism in food borne diseases Practical- Microbial testing of water- a. Presumptive, confirmed & completed test
Month: SEPTEMBER			Module/Unit:	Sub-units planned
Lectures	Practical	Total	Paper XI Unit I	
8	40	48		b. Food borne diseases- ii. Food poisoning iii. Food infection 2. Industrial Microbiology a. Strain improvement b. Scale up of fermentation Practical- SPC of tomato sause
Month: OCTOBER			Module/Unit:	Sub-units planned
Lectures	Practical	Total	Paper XI Unit I	
4	32	36		2. Industrial Microbiology b. Scale up of fermentation c. Microbiological assays d. Preservation of industrially important microorganism Practical- Production of wine & examination for pH, colour & alcohol content


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Academic Year: 2023-24

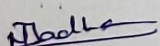
Semester: VI(B.Sc. III)

Department: Microbiology

Subject: Microbiology Course Title: DSE-1010F2: PAPER XVI: Agricultural & Environmental Microbiology

Name of the teacher: Ms.N.R.JADHAV

Month: December			Module/Unit:	Sub-units planned
Lectures	Practical	Total	Paper XVI Unit I	1.General characteristics of waste- a. Liquid waste b. Solid waste c. standards as per MPCB Practical- Amylase production by using <i>Bacillus</i> species
8	40	48		
Month: January			Module/Unit:	Sub-units planned
Lectures	Practical	Total	Paper XVI Unit I	2. Sewage Microbiology a.Physico-chemical & biological characteristics b. Treatment methods Practical- Isolation of lactic acid bacteria from fermented food
8	40	48		
Month: February			Module/Unit:	Sub-units planned
8	40	48	Paper XVI Unit I	3.characteristics & treatment of waste generated by- a.Sugar industry b. Dairy industry 4.Eutrofication Practical- Examination of milk by direct microscopic count (DMC)
Month: March			Module/Unit:	Sub-units planned
8	40	48	Paper XVI Unit I	4.Eutrofication a. Classification of lakes b. Sources c. Consequences d. Control Practical- as per syllabus


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