

### Annual Teaching Plan

Academic Year: 2018-2019 Semester: VI ( B.Sc.III) Department: Microbiology

Subject: Microbiology Course Title: DSE:1010f1 virology and microbial genetics

Name of the teacher – Ms.V.V.Misal

Month : November			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section II Unit I	1. One cistron - one polypeptide hypothesis. 2. Molecular mechanism of gene expression
12	8	20		
Month : December			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section II 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 : January			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section II Unit II	1. Genetic complementation 2. Extrachromosomal inheritance:
12	8	20		
Month : February			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section II Unit II	Techniques in Molecular Biology – Genetic engineering
12	8	20		

Name and Signature of Teacher

Name and Signature of HoD



Name and Signature of Teacher

Name and Signature of HoD

### Annual Teaching Plan

Academic Year: 2018-2019 Semester: II ( B.Sc.I) Department: Microbiology

Subject: Microbiology Course Title: bacteriology & applied microbiology

Name of the teacher – Ms.V.V.Misal

Month : November			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Paper II Unit II	A. Proteins : i) Introduction to amino acids , peptide bond. ii) Types of amino acids based on R group
5	8	13		
Month : December			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Paper II Unit II	B. Carbohydrates: i) Monosaccharides ii) Disaccharides ii) Polysaccharides
5	8	13		
Month : January			Module/Unit:	Sub-units planned
5	8	13	Paper II Unit II	C. Lipids : i) Simple lipids – Fats, oils and waxes ii). Compound lipids – Phospholipid, Glycolipids iii) Derived lipids – Cholesterol
Month :February			Module/Unit:	Sub-units planned
5	8	13	Paper II Unit II	D. Enzymes: E. Nucleic Acids

Name and Signature of Teacher

Name and Signature of HOD



### Annual Teaching Plan

Academic Year: 2018-2019 Semester: III ( B.Sc.II) Department: Microbiology

Subject: Microbiology Course Title: microbial physiology , metabolism & applied microbiology

Name of the teacher – Ms.V.V.Misal

Month : june			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Paper III Sec II, Unit IV	A . Basic concepts of fermentation. 1. Definition, concept of primary and secondary metabolites.
6	8	14		
Month : july			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Paper III Sec II, Unit IV	2. Types of fermentations – Batch, continuous, dual and multiple fermentation.
6	8	14		
Month : august			Module/Unit:	Sub-units planned
6	8	14	Paper III Sec II, Unit IV	3. Typical Fermentor design – Parts and their functions.
Month -september			Module/Unit:	Sub-units planned
6	8	14	Paper III Sec II, Unit IV	4. Factors affecting fermentation process.
Month - October			Module/Unit:	Sub-units planned
6	8	14	Paper III Sec II, Unit IV	C. Fermentation media - a. Water, carbon source, nitrogen source, precursors,
Month - November			Module/Unit:	Sub-units planned
6	8	14	Paper III Sec II, Unit IV	growth factors, antifoam agents, chelating agents.

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### Annual Teaching Plan

Academic Year: 2018-19 Semester: IV ( B.Sc.II) Department: Microbiology

Subject: Microbiology Course Title: microbial genetics, molecular biology

Name of the teacher – Ms.V.V.Misal

Month : November			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Paper II Unit II	<b>Molecular Biology</b> 1. Gene transfer in bacteria. 2. Fate of exogenote in recipient cell
5	8	13		
Month : December			Module/Unit:	
Lectures	Practicals	Total	Paper II Unit II	3. Modes of gene transfer – a. Transformation. b. Conjugation c. Transduction
5	8	13		
Month : January			Module/Unit:	
Lectures	Practicals	Total	Paper II Unit I	1. Plasmids – a. Natural – Properties, types , structure & applications b. Artificial – pBR 322- structure and applications
5	8	13		
Month : February			Module/Unit:	
Lectures	Practicals	Total	Paper II Unit I	2. DNA repair : i) Photoreactivation ii) Dark repair mechanism ( Excision repair)
5	8	13		

  
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### Annual Teaching Plan

Academic Year: 2018-2019 Semester: V ( B.Sc.III) Department: Microbiology

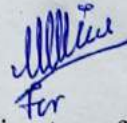
Subject: Microbiology Course Title: DSE:1010E1 Immunology and medical microbiology

Name of the teacher – Ms.V.V.Misal

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

  
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### Annual Teaching Plan

Academic Year: 2018-2019 Semester: VI ( B.Sc.III) Department: Microbiology

Subject: Microbiology Course Title: DSE:1010f1 virology and microbial genetics

Name of the teacher – Ms.V.V.Misal

Month : November			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section II Unit I	1. One cistron - one polypeptide hypothesis. 2. Molecular mechanism of gene expression
12	8	20		
Month : December			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section II 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 : January			Module/Unit:	Sub-units planned
12	8	20	Section II Unit II	1. Genetic complementation 2. Extrachromosomal inheritance:
Month : February				
12	8	20	Section II Unit II	Techniques in Molecular Biology – Genetic engineering

Name and Signature of Teacher

Name and Signature of HoD



### Annual Teaching Plan

Academic Year: 2018-2019

Semester: B.Sc I Sem I

Department: Microbiology

Subject: Microbiology

Course Title: Introduction to microbiology and microbial diversity

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

Month: June			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section I Unit I	1. Types of Microorganisms: A .General characteristics of different group- Acellular , Cellular microorganism
5	2	7		
Month: July			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section II Unit I	1. Structure of Prokaryotic cell
5	2	7		
Month: August			Module/Unit:	Sub-units planned
5	2	7	Section I Unit I	1. Structure of eukaryotic cell
Month: September			Module/Unit:	Sub-units planned
5	2	7	Section I Unit I	2. Difference between prokaryotic and eukaryotic microorganisms
Month: October			Module/Unit:	Sub-units planned
5	2	7	Section I Unit I	2. Control of Microorganisms A. Definitions B. Mode of Action and application of -a) Physical agents
Month: November			Module/Unit:	Sub-units planned
5	2	7	Section I Unit I	b) Chemical Agents

S.A. Pise   
Name and Signature of Teacher



  
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### Annual Teaching Plan

Academic Year: 2018-2019

Semester: B.Sc I Sem II

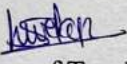
Department: Microbiology

Subject: Microbiology

Course Title: Bacteriology and applied microbiology

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

Month: November			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section II Unit IV	1. Enrichment and Isolation of Microorganisms from natural environment
5	2	7		
Month: December			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section II Unit IV	2. Preservation of microbial cultures
5	2	7		
Month: January			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section II Unit IV	3. Systematic study of pure cultures:
5	2	7		
Month: February			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section II Unit IV	4. Concept Culture collection centres.
5	2	7		

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### Annual Teaching Plan

Academic Year: 2018-2019

Semester: B.Sc II Sem III

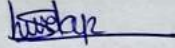
Department: Microbiology

Subject: Microbiology


Course Title: Microbial Physiology, Metabolism and Applied Microbiology

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

Month: June			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section II Unit III	A] Air Microbiology:
6	2	8		
Month: July			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section II Unit III	B ] Food Microbiology
6	2	8		
Month: August			Module/Unit:	Sub-units planned
6	2	8	Section II Unit III	1. Biostatistics
Month: September			Module/Unit:	Sub-units planned
6	2	8	Section II  Unit III	1. Bioinformatics
Month: October			Module/Unit:	Sub-units planned
6	2	8	Section II  Unit III	1. Bioinformatics - Mean, Median
Month: November			Module/Unit:	Sub-units planned
6	2	8	Section II  Unit III	Mode & equationsa

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## Annual Teaching Plan

Academic Year: 2018-2019

Semester: B.Sc II Sem IV

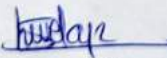
Department: Microbiology


Subject: Microbiology

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

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

Month: November			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section II	1.Definations 2.Virulence factor
6	2	8	Unit III	
Month: December			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section II	1.Types of diseases 2.Types of infections
6	2	8	Unit III	
Month: January			Module/Unit:	Sub-units planned
6	2	8	Section II	1.Modes of transmission of diseases 2. General principles of prevention and control of microbial diseases
			Unit III	
Month: February			Module/Unit:	Sub-units planned
6	2	8	Section II	1. Normal flora of human body & its significance (flora of skin, throat, GI tract & Urinogenital tract)
			Unit III	

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### Annual Teaching Plan

Academic Year: 2018-2019

Semester: B.Sc III Sem V

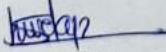
Department: Microbiology

Subject: Microbiology


Course Title: Industrial microbiology and microbial biochemistry

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

Month: June			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section II Unit I	1. Enzymes
12	4	16		
Month: July			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: August			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: September			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section II Unit II	1. Prokaryotic Biosynthesis of RNA,
12	4	16		
Month: October			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section II Unit II	DNA, Proteins synthesis
12	4	16		
Month: November			Module/Unit:	Sub-units planned synthesis
Lectures	Practicals	Total	Section II Unit II	Peptidoglycan synthesis
12	4	16		

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## Annual Teaching Plan

Academic Year: 2018-2019

Semester: B.Sc III Sem VI

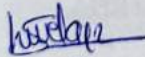
Department: Microbiology


Subject: Microbiology

Course Title: Agricultural and Environmental microbiology

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

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

S.A.Pise   
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## Annual Teaching Plan

Academic Year: 2018-2019

Semester: B.Sc I Sem I


Department: Microbiology

Subject: Microbiology

Course Title: Introduction to microbiology and microbial diversity

Name of the teacher: Ms. R.R.Suryawanshi

Month: June			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section II	1. Microbial Nutrition A) Nutritional requirements of microorganisms:
5	2	7	Unit IV	
Month: July			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section II	B) Nutritional types of microorganism based on carbon and energy sources
5	2	7	Unit IV	
Month: August			Module/Unit:	Sub-units planned
5	2	7	Section II	2. Culture media— Components of media
			Unit IV	
Month: September			Module/Unit:	Sub-units planned
5	2	7	Section II	Types of media based on –physical state, Chemical state
			Unit IV	
Month: October			Module/Unit:	Sub-units planned
5	2	7	Section II	Types of media based on functions
			Unit IV	
Month: November			Module/Unit:	Sub-units planned
5	2	7	Section II	3. Cultivation of microorganisms
			Unit IV	

Ms. R.R. Suryawanshi 

Name and Signature of Teacher



  
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### Annual Teaching Plan

Academic Year: 2018-2019

Semester: B.Sc I Sem II

Department: Microbiology

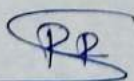
Subject: Microbiology


Course Title: Bacteriology and applied microbiology

Name of the teacher: Ms. R.R.Suryawanshi

Month: November			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section II Unit III	1 Water microbiology a) Sources of microorganisms in water. b) Fecal pollution of water.
5	2	7		
Month: December			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section II Unit III	c) Indicators of fecal pollution d) Routine Bacteriological analysis of water.
5	2	7		
Month: January			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section II Unit III	2) Milk Microbiology a) General composition of Milk. b) Sources of contamination in milk
5	2	7		
Month: February			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section II Unit III	c) Microbiological examination of Milk d. Spoilage of milk
5	2	7		

Ms. R.R. Suryawanshi  
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## Annual Teaching Plan

Academic Year: 2018-2019

Semester: B.Sc II Sem III

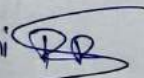
Department: Microbiology

Subject: Microbiology

Course Title: Microbial Physiology, Metabolism and Applied Microbiology

Name of the teacher: Ms. R.R.Suryawanshi

Month: June			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section I	A] Growth : Growth phases, measurement of growth,
6	2	8	Unit I	
Month: July			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section I	continuous growth, synchronous growth and diauxic growth
6	2	8	Unit I	
Month: August			Module/Unit:	Sub-units planned
6	2	8	Section I	B] Effect of environmental factors on microbial growth – temperature ,pH
			Unit I	
Month: September			Module/Unit:	Sub-units planned
6	2	8	Section I	Osmotic Pressure , Heavy Metal, Radiations
			Unit I	
Month : October			Module/Unit:	Sub-units planned
6	2	8		c. Transport across the cell membrane - Active transport
Month : November			Module/Unit:	Sub-units planned
6	2	8		Passive Transport

Ms. R.R. Suryawanshi 

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### Annual Teaching Plan

Academic Year: 2018-2019

Semester: B.Sc II Sem IV

Department: Microbiology

Subject: Microbiology

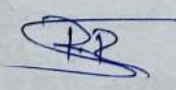
Course Title: Microbial Genetics, Molecular Biology, Basics in Medical Microbiology & Immunology

Name of the teacher: Ms. R.R.Suryawanshi

Month: December			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section I	1. Forms of DNA. 2. Basic concepts – Gene, genome, genotype, phenotype, mutagen, recon, muton, cistron, split genes.
6	2	8	Unit I	
Month: January			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section I	3. Genetic code 4. Organization of chromosomal DNA in <i>E.Coli</i>
6	2	8	Unit I	
Month: February			Module/Unit:	Sub-units planned
6	2	8	Section I	B] Mutation: - 1. Basic Concepts of Mutation 2. Spontaneous mutation
			Unit I	
Month: March			Module/Unit:	Sub-units planned
6	2	8	Section I	3. Induced mutations
			Unit I	

R. R. Suryawanshi

Name and Signature of Teacher





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### Annual Teaching Plan

Academic Year: 2018-2019

Semester: B.Sc III Sem V


Department: Microbiology

Subject: Microbiology


Course Title: Industrial microbiology and microbial biochemistry

Name of the teacher: Ms. R.R.Suryawanshi

Month: June			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section I	1. Food Microbiology 2. Industrial Microbiology
12	4	16	Unit I	
Month: July			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section I	1. Industrial production of a. Amylase
12	4	16	Unit II	
Month: August			Module/Unit:	Sub-units planned
12	4	16	Section I	b. Grape wine c. Penicillin
			Unit II	
Month: September			Module/Unit:	Sub-units planned
12	4	16	Section I	d. Citric acid e. SCP
			Unit II	
Month: October			Module/Unit:	Sub-units planned
			Section I	2. Microbial production of a. Vitamin B12 b. Amino acid- Lysine 3. Probiotics
			Unit II	
Month: November			Module/Unit:	Sub-units planned
			Section I	4. Downstream processing and product recovery  5. Testing of sterility, pyrogen, carcinogenicity, toxicity and allergens
			Unit II	

P.R. Suryawanshi   
Name and Signature of Teacher



  
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### Annual Teaching Plan

Academic Year: 2018-2019

Semester: B.Sc III Sem VI

Department: Microbiology

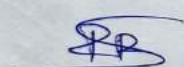
Subject: Microbiology

Course Title: Agricultural and Environmental microbiology

Name of the teacher: Ms. R.R.Suryawanshi

Month: November			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section II	1.General characteristics of waste
12	4	16	Unit I	
Month: December			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section II	2.Sewage Microbiology 3.Characteristics and treatment of waste 4.Eutrophication
12	4	16	Unit I	
Month: January			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section II	1. Biological safety in laboratory
12	4	16	Unit II	
Month: February			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section II	2. Environmental monitoring 3. Environmental Impact Assessment
12	4	16	Unit II	

R.R. Suryawanshi  
Name and Signature of Teacher




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Name and Signature of HOD

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## Annual Teaching Plan

Academic Year: 2018-2019

Semester: B.Sc I Sem I

Department: Microbiology

Subject: Microbiology

Course Title: Introduction to microbiology and microbial diversity

Name of the teacher: Mr. Suraj D. Gabale

Month: June			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section I Unit I	1. History and milestones in Microbiology a. Spontaneous generation vs biogenesis b. Contributions of scientists
5	2	7		
Month: July			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section I Unit I	1. History and milestones in Microbiology
5	2	7		
Month: August			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section I Unit I	a. Beneficial and harmful activities of Microorganisms b. Classification of organisms
5	2	7		
Month: September			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section I Unit I	2. Scope of Microbiology
5	2	7		
Month: October			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section I Unit I	a. Introduction to applied branches of Microbiology
5	2	7		
Month: November			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section I Unit I	3. Bacterial systematic a. Taxonomic ranks b. Bacterial nomenclature
5	2	7		

Name and Signature of Teacher

Mr. S.D. Gabale




Name and Signature of HOD

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## Annual Teaching Plan

Academic Year: 2018-2019

Semester: B.Sc I Sem II

Department: Microbiology


Subject: Microbiology

Course Title: Bacteriology and applied microbiology

Name of the teacher: Mr. Suraj D. Gabale

Month: November			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section I	1. Bacterial cell organization. a. Cell size shape and arrangement b. Cell wall
5	2	7	Unit I	
Month: December			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section I	c. Cell membrane d. Capsule and slime layer e. Flagella
5	2	7	Unit I	
Month: January			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section I	f. Pili g. Endospores h. Nucleoid i. Mesosomes j. Ribosome
5	2	7	Unit I	
Month: February			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section I	1. Reserve food material a. Nitrogenous b. Non-nitrogenous
5	2	7	Unit I	

Name and Signature of Teacher

Mr. S. D. Gabale 

Name and Signature of HOD

  
For  
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DEPARTMENT OF MICROBIOLOGY  
VIVEKANAND COLLEGE, KOLHAPUR  
(AUTONOMOUS)



## Annual Teaching Plan

Academic Year: 2018-2019

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: November			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section I Unit I	1. General characteristics of Viruses 2. One step growth experiment 3. Viroids 4. Prions 5. Capsid, envelope and nucleic acid of viruses
12	4	16		
Month: December			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section I 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: January			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section I Unit III	Multiplication cycles of- a. Adenoviruses b. TMV c. Lambda phage d. T4 bacteriophage
12	4	16		
Month: February			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section I Unit IV	1. Types of cancer cells 2. Types of cancer 3. Oncogenic viruses 4. Hypothesis about cancer
12	4	16		

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## Annual Teaching Plan

Academic Year: 2018-2019

Semester: B.Sc III Sem V

Department: Microbiology


Subject: Microbiology

Course Title: Immunology and Clinical Microbiology


Name of the teacher: Mr. Suraj D. Gabale

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

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### Annual Teaching Plan

Academic Year: 2018-2019

Semester: B.Sc II Sem III

Department: Microbiology


Subject: Microbiology

Course Title: Microbial Physiology, Metabolism and Applied Microbiology


Name of the teacher: Mr. Suraj D. Gabale

Month: July			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section I	1. Catabolism of glucose a. HMP pathway b. EMP pathway
6	2	8	Unit II	
Month: August			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section I	c. ED pathway d. TCA cycle
6	2	8	Unit II	
Month: September			Module/Unit:	Sub-units planned
6	2	8	Section I	2. Substrate level phosphorylation
			Unit II	
Month: October			Module/Unit:	Sub-units planned
6	2	8	Section I	a. Homolactic acid fermentation b. Heterolactic acid fermentation
			Unit II	
Month: October			Module/Unit:	Sub-units planned
6	2	8	Section I	3. Oxidative phosphorylation
			Unit II	
Month: November			Module/Unit:	Sub-units planned
6	2	8	Section I	Chemiosmotic hypothesis
			Unit II	

Name and Signature of Teacher

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### Annual Teaching Plan

Academic Year: 2018-2019

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: Mr. Suraj D. Gabale

Month: November			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section II	IMMUNOLOGY 1. Immunity 2. Non-specific defense mechanism
6	2	8	Unit II	
Month: December			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section II	3. Antigens a. Chemical nature b. Types c. factors affecting antigenicity 4. Antibodies
6	2	8	Unit II	
Month: January			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section II	5. Theories of antibody production 6. Immune response
6	2	8	Unit II	
Month: February			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Section 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	Unit II	

Name and Signature of Teacher

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