

Shri Swami Vivekanand Shikshan Sanstha's
Vivekanand College , Kolhapur (Empowered Autonomous)
Department of Microbiology
Syllabus completion report 2023- 2024

Sr.No	Syllabus Allotted	Syllabus Completed	Remaining Syllabus
1	B.Sc.I Sem I Paper II DSC 1010 A: Basic techniques in Microbiology Unit I : A. General Principles of Microscopy : 1. Types of microscopes: B. Stains and Staining procedures 1. Definition of dye and stain 2. Classification of stains . 3. Principles, Procedure, Mechanism of staining procedures a) Monochrome staining b) Negative staining c) Differential staining : 4. Special staining methods Practical Course : I 3. Study of Laboratory instruments used in the microbiology laboratory: a)Laminar air flow, b) autoclave, incubator c)hot air oven d) colorimeter, 4. Study of compound microscope. 5. Microscopic observation of bacteria: c)Gram's staining,	B.Sc.I Sem I Paper II DSC 1010 A: Basic techniques in Microbiology Unit I : A. General Principles of Microscopy : 1. Types of microscopes: B. Stains and Staining procedures 1. Definition of dye and stain 2. Classification of stains . 3. Principles, Procedure, Mechanism of staining procedures a) Monochrome staining b) Negative staining c) Differential staining : 4. Special staining methods Practical Course : I 3. Study of Laboratory instruments used in the microbiology laboratory: a)Laminar air flow, b) autoclave, incubator c)hot air oven d) colorimeter, 4. Study of compound microscope. 5. Microscopic observation of bacteria: c)Gram's staining.	NIL

Name of Teacher – Ms.V.V.Misal



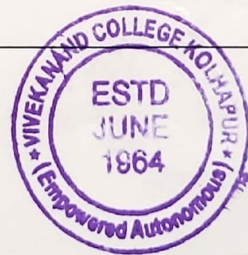

Dr.G.K. Sontakke
HEAD

DEPARTMENT OF MICROBIOLOGY
VIVEKANAND COLLEGE, KOLHAPUR
(EMPOWERED AUTONOMOUS)

Shri Swami Vivekanand Shikshan Sanstha's
Vivekanand College , Kolhapur (Empowered Autonomous)
 Department of Microbiology
Syllabus completion report 2023- 2024

Sr.No	Syllabus Allotted	Syllabus Completed	Remaining Syllabus
1	B.Sc.I Sem II Paper IV DSC 1010 B: Applied Microbiology Unit II : A. Microbial Nutrition 1. Nutritional requirements of microorganisms: 2. Concept of auxotroph, Prototroph and fastidious organisms based on Growth factors. 3. Nutritional types of microorganism based on carbon and energy sources. a. Autotrophs b. Heterotrophs c. Phototrophs d. Chemotrophs e. Photoautotrophs f. Chemoautotrophs g. Photoheterotrophs h. Chemoheterotrophs. B. Culture media: 1. Components of media, 2. Types of media based on- C. Cultivation of microorganisms: 1. Use of culture media for cultivation. 2. Conditions required for growth of the microorganisms Practical – 1. IMViC Test 2. SPC of Soil 3. MBRT	B.Sc.I Sem II Paper IV DSC 1010 B: Applied Microbiology Unit II : A. Microbial Nutrition 1. Nutritional requirements of microorganisms: 2. Concept of auxotroph, Prototroph and fastidious organisms based on Growth factors. 3. Nutritional types of microorganism based on carbon and energy sources. a. Autotrophs b. Heterotrophs c. Phototrophs d. Chemotrophs e. Photoautotrophs f. Chemoautotrophs g. Photoheterotrophs h. Chemoheterotrophs. B. Culture media: 1. Components of media, 2. Types of media based on- C. Cultivation of microorganisms: 1. Use of culture media for cultivation. 2. Conditions required for growth of the microorganisms Practical – 1. IMViC Test 2. SPC of Soil 3. MBRT	NIL

Name of Teacher – Ms.V.V.Misal

Dr.G.K. Sontakke
HEAD

DEPARTMENT OF MICROBIOLOGY
 VIVEKANAND COLLEGE, KOLHAPUR
 (EMPOWERED AUTONOMOUS)



Shri Swami Vivekanand Shikshan Sanstha's
Vivekanand College, Kolhapur (Empowered Autonomous)
Department of Microbiology
Syllabus completion report 2023- 2024

Sr.No	Syllabus Allotted	Syllabus Completed	Remaining Syllabus
1	B.Sc.II Sem III Paper V DSC 1010 C: Microbial Physiology and Metabolism Unit II :	B.Sc.II Sem III Paper V DSC 1010 C: Microbial Physiology and Metabolism Unit II :	NIL
2	A] Catabolism of glucose – EMP, HMP, ED and TCA cycle. B] Fermentation: - Homolactic & Heterolactic fermentation C]Bacterial electron transport chain – Components, flow of electrons & mechanism of ATP generation – Chemiosmotic hypothesis. Practical – 1. Micrometry. 2.Amino acid decarboxylation test 3. Amino acid deamination test 4. Hugh and Leifson's test	A] Catabolism of glucose – EMP, HMP, ED and TCA cycle. B] Fermentation: - Homolactic & Heterolactic fermentation C]Bacterial electron transport chain – Components, flow of electrons & mechanism of ATP generation – Chemiosmotic hypothesis. Practical – 1. Micrometry. 2.Amino acid decarboxylation test 3. Amino acid deamination test 4. Hugh and Leifson's test	

Name of Teacher – Ms.V.V.Misal - *Misal*



Dr. G.K. Sontakke
 Dr.G.K. Sontakke
 HEAD
 DEPARTMENT OF MICROBIOLOGY
 VIVEKANAND COLLEGE, KOLHAPUR
 (EMPOWERED AUTONOMOUS)

Shri Swami Vivekanand Shikshan Sanstha's
Vivekanand College, Kolhapur (Empowered Autonomous)
Department of Microbiology
Syllabus completion report 2023- 2024

Sr.No	Syllabus Allotted	Syllabus Completed	Remaining Syllabus
1	B.Sc.II Sem IV Paper VII DSC 1010 D: Microbial Genetics and Molecular Biology A) Basic concepts of genetics – ii)Forms of DNA iii) Genetic code – iv) Organization of Chromosomal DNA in <i>E.coli</i> . B) Mutation: - i) Basic Concepts of Mutation ii) Spontaneous mutation – Definition and basic concepts.	B.Sc.II Sem IV Paper VII DSC 1010 D: Microbial Genetics and Molecular Biology A) Basic concepts of genetics – ii)Forms of DNA iii) Genetic code – iv) Organization of Chromosomal DNA in <i>E.coli</i> . B) Mutation: - i) Basic Concepts of Mutation ii) Spontaneous mutation – Definition and basic concepts.	NIL
2	iii) Induced mutations – iv) Mutagens that distort DNA – Practical – 1. Effect of Salt 2. Effect of pH 3. Widal test 4. Diauxic growth curve	iii) Induced mutations – iv) Mutagens that distort DNA – Practical – 1. Effect of Salt 2. Effect of pH 3. Widal test 4. Diauxic growth curve	

Name of Teacher – Ms.V.V.Misal

Misal



Dr.G.K. Sontakke
HEAD
 DEPARTMENT OF MICROBIOLOGY
 VIVEKANAND COLLEGE, KOLHAPUR
 (EMPOWERED AUTONOMOUS)

Shri Swami Vivekanand Shikshan Sanstha's
Vivekanand College, Kolhapur (Empowered Autonomous)

Department of Microbiology

Syllabus completion report 2023- 2024

Sr.No	Syllabus Allotted	Syllabus Completed	Remaining Syllabus
1	B.Sc.III Sem V Paper IX DSE 1010 EI: Immunology and Medical Microbiology SEC- I Unit I 1.Cells of Immune system – 2. Membrane receptors for antigen and their role in antigen recognition 3. Molecular mechanism of antibody production. 4. Cytokines - 5. Immunological tolerance : 6. Interferon –	B.Sc.III Sem V Paper IX DSE 1010 EI: Immunology and Medical Microbiology SEC- I Unit I 1.Cells of Immune system – 2. Membrane receptors for antigen and their role in antigen recognition 3. Molecular mechanism of antibody production. 4. Cytokines - 5. Immunological tolerance : 6. Interferon –	NIL
2	Unit – II 1. Complement – 2.Monoclonal antibodies - 3.New diagnostic techniques :- 4. Hypersensitivity – 5 . Autoimmune disease : Practical –I IMMUNOLOGY AND MEDICAL MICROBIOLOGY 1. Isolation of - a. <i>Pseudomonas aeruginosa</i> b <i>Klebsiella pneumoniae</i> c. <i>Candida albicans</i> 2. Determination of MIC of streptomycin	Unit – II 1. Complement – 2.Monoclonal antibodies - 3.New diagnostic techniques :- 4. Hypersensitivity – 5 . Autoimmune disease : Practical –I IMMUNOLOGY AND MEDICAL MICROBIOLOGY 1. Isolation of - a. <i>Pseudomonas aeruginosa</i> b <i>Klebsiella pneumoniae</i> c. <i>Candida albicans</i> 2. Determination of MIC of streptomycin	

Name of Teacher – Ms.V.V.Misal



Dr. G. K. Sontakke

HEAD
DEPARTMENT OF MICROBIOLOGY
VIVEKANAND COLLEGE, KOLHAPUR
(EMPOWERED AUTONOMOUS)



Shri Swami Vivekanand Shikshan Sanstha's
Vivekanand College, Kolhapur (Empowered Autonomous),
 Department of Microbiology
Syllabus completion report 2023- 2024


Sr.No	Syllabus Allotted	Syllabus Completed	Remaining Syllabus
1	B.Sc.III Sem VI Paper XIV DSE 1010 F 2 Immunology and Medical Microbiology SEC- I Unit I 1. One cistron - one polypeptide hypothesis. 2. Molecular mechanism of gene expression 3. Mutations 4. Methods of isolation and detection of mutants	B.Sc.III Sem VI Paper XIV DSE 1010 F 2 Immunology and Medical Microbiology SEC- I Unit I 1. One cistron - one polypeptide hypothesis. 2. Molecular mechanism of gene expression 3. Mutations 4. Methods of isolation and detection of mutants	NIL
2	Unit – II 1.Genetic complementation - Cis-trans test 2.Extrachromosomal inheritance: 3.Techniques in Molecular Biology – 4. Genetic engineering b. Tools of genetic engineering – c.Techniques – d. Application of genetic engineering . Practical –I Immunology and medical microbiology 1. Determination of sensitivity of common pathogens to antibiotics by paper disc method. 2. Serological tests : a. Widal test - Quantitative 3. Haematology : a. Estimation of haemoglobin by Sahli's method. d. Total and differential blood cells count	Unit – II 1.Genetic complementation - Cis-trans test 2.Extrachromosomal inheritance: 3.Techniques in Molecular Biology – 4. Genetic engineering b. Tools of genetic engineering – c.Techniques – d. Application of genetic engineering . Practical –I Immunology and medical microbiology 1. Determination of sensitivity of common pathogens to antibiotics by paper disc method. 2. Serological tests : a. Widal test - Quantitative 3. Haematology : a. Estimation of haemoglobin by Sahli's method. d. Total and differential blood cells count.	



- 4. Urine analysis
- b. Test for protein (Acetic acid test)
- c. Test for ketone bodies (Rothra's test)
- d. Test for bile salt.

- 4. Urine analysis
- b. Test for protein (Acetic acid test)
- c. Test for ketone bodies (Rothra's test)
- d. Test for bile salt

Name of Teacher – Ms.V.V.Misal



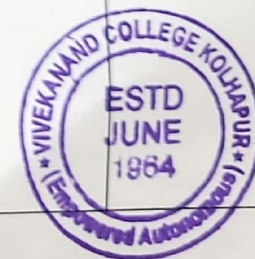
Dr.G.K. Sontakke
HEAD
DEPARTMENT OF MICROBIOLOGY
VIVEKANAND COLLEGE, KOLHAPUR
(EMPOWERED AUTONOMOUS)



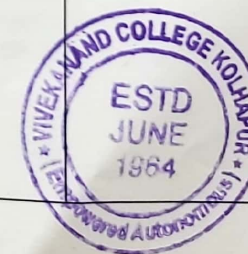
Shri Swami Vivekanand Shikshan Sanstha's
Vivekanand College, Kolhapur (Empowered Autonomous)
Department of Microbiology
Academic year 2023- 2024
Syllabus completion report

Name of teacher: Mr. Suraj Dipak Gabale


Sr. No	Syllabus Allotted	Syllabus Completed	Remaining Syllabus
1	<p>B. Sc. I Semester I</p> <p>A. History and milestones in microbiology:</p> <ol style="list-style-type: none"> 1. Spontaneous generation vs. biogenesis. 2. Contributions of <ol style="list-style-type: none"> a) Antony von Leeuwenhoek b) Edward Jenner c) Louis Pasteur d) Robert Koch e) Joseph Lister f) Alexander Fleming g) Hargobindsingh Khorana. 3. Classification of microorganisms- <ol style="list-style-type: none"> a) Whittaker's five kingdom b) Carl Woese three kingdom classification systems. 4. Taxonomic ranks 5. Beneficial and harmful activities of microorganisms. <p>B. Bacterial systematics:</p> <ol style="list-style-type: none"> a) Common OR vernacular name b) Scientific name <p>C. Types of Microorganisms:</p> <ol style="list-style-type: none"> 1. General characteristics of different groups: 	<p>B. Sc. I Semester I</p> <p>A. History and milestones in microbiology:</p> <ol style="list-style-type: none"> 2. Spontaneous generation vs. biogenesis. 2. Contributions of <ol style="list-style-type: none"> a) Antony von Leeuwenhoek b) Edward Jenner c) Louis Pasteur d) Robert Koch e) Joseph Lister f) Alexander Fleming g) Hargobindsingh Khorana. 6. Classification of microorganisms- <ol style="list-style-type: none"> a) Whittaker's five kingdom b) Carl Woese three kingdom classification systems. 7. Taxonomic ranks 8. Beneficial and harmful activities of microorganisms. <p>B. Bacterial systematics:</p> <ol style="list-style-type: none"> a) Common OR vernacular name b) Scientific name <p>C. Types of Microorganisms:</p>	Nil




<p>a) Acellular microorganisms-Viruses, Viroids, Prions b) Cellular microorganisms- With emphasis on distribution, occurrence and morphology. c) Structure of Prokaryotic and eukaryotic cell. d) Difference between prokaryotic & eukaryotic microorganisms.</p>	<p>1. General characteristics of different groups: a) Acellular microorganisms-Viruses, Viroids, Prions b) Cellular microorganisms- with emphasis on distribution, occurrence and morphology. c) Structure of Prokaryotic and eukaryotic cell. d) Difference between prokaryotic & eukaryotic microorganisms.</p>	
<p>Practicals: 1. Sugar fermentation test 2. H₂S test 3. Cell wall staining</p>	<p>Practicals: 1. Sugar fermentation test 2. H₂S test 3. Cell wall staining</p>	<p>Nil</p>
<p>2. B. Sc. II Semester III A] Air Microbiology: i) Sources of microorganisms in air. ii) Definitions of- a) Infectious dust, b) Droplets, c) Droplet nuclei iii) Sampling methods for microbial examination of air - a) Solid impaction-Sieve device b) Liquid Impingement-Bead-bubbler device iv) Gnotobiology Introduction B] Bioinstrumentation: Principle, working and application of- i) Electrophoresis (Agarose gel, PAGE) ii) UV-visible spectrophotometer. C] Biostatistics: i) Introduction ii) Data presentation-Tables and Graphs (Line and Histogram) iii) Central tendency : Mean, Median and Mode iv) Applications.</p>	<p>B. Sc. II Semester III A] Air Microbiology: i) Sources of microorganisms in air. ii) Definitions of- a) Infectious dust, b) Droplets, c) Droplet nuclei iii) Sampling methods for microbial examination of air - a) Solid impaction-Sieve device b) Liquid Impingement-Bead-bubbler device iv) Gnotobiology Introduction B] Bioinstrumentation: Principle, working and application of- i) Electrophoresis (Agarose gel, PAGE) ii) UV-visible spectrophotometer. C] Biostatistics: i) Introduction ii) Data presentation-Tables and Graphs (Line and Histogram)</p>	<p>Nil</p>



<p>D] Bioinformatics: i) Introduction of basic terminologies-Database, Genomics and Proteomics Applications of bioinformatics.</p>	<p>iii) Central tendency :Mean, Median and Mode iv) Applications. E] Bioinformatics: i) Introduction of basic terminologies-Database, Genomics and Proteomics Applications of bioinformatics.</p>	
<p>Practicals: 1. Preparation of gelatin agar medium 2. Demonstration of gelatin hydrolysis test 3. Demonstration of growth curve of <i>E. coli</i> 4. Demonstration of diauxic growth curve of <i>E. coli</i></p>	<p>Practicals: 1. Preparation of gelatin agar medium 2. Demonstration of gelatin hydrolysis test 3. Demonstration of growth curve of <i>E. coli</i> 4. Demonstration of diauxic growth curve of <i>E. coli</i></p>	Nil
<p><u>B.Sc. III Semester V</u> <u>Theory – Medical Microbiology</u> 1. Unit 1 2. Unit 2</p>	<p><u>B.Sc. III Semester V</u> <u>Theory – Medical Microbiology</u> 1. Unit 1 2. Unit 2</p>	Nil
<p>Practicals: i) U. V. Survival curve ii) Isolation of Vit B12 auxotrophic mutants of <i>E. coli</i> iii) Isolation of streptomycin resistant mutants of <i>E. coli</i> iv) Isolation of Lac negative mutants of <i>E. coli</i></p>	<p>Practicals: i) U. V. Survival curve ii) Isolation of Vit B12 auxotrophic mutants of <i>E. coli</i> iii) Isolation of streptomycin resistant mutants of <i>E. coli</i> iv) Isolation of Lac negative mutants of <i>E. coli</i></p>	Nil


Mr. S. D. Gabale




Dr. G. K. Sontakke
HEAD
DEPARTMENT OF MICROBIOLOGY
VIVEKANAND COLLEGE, KOLHAPUR
(EMPOWERED AUTONOMOUS)

"Dissemination of education for Knowledge, Science and Culture"
-Shikshanmaharshi Dr. Bapuji Salunkhe

Shri Swami Vivekanand Shikshan Sanstha's
Vivekanand College, Kolhapur (Empowered Autonomous)
Department of Microbiology
Academic year 2023 - 2024
Syllabus completion report

Name of teacher: Mr. Suraj Dipak Gabale


Sr.No	Syllabus Allotted	Syllabus Completed	Remaining Syllabus
1	B.Sc. I Semester II DSC03MIC21 Basic Biochemistry Unit II: Biomolecules A. Carbohydrates: 1) Monosaccharides : 2) Disaccharides : 3) Polysaccharides : B .Lipids : 1) Simple lipids - Fats, oils and waxes. 2) Compound lipids 3) Derived lipids - Cholesterol C. Nucleic Acids : 1) DNA - Structure and function. 2) RNA - Types, structure and functions.	B.Sc. I Semester II DSC03MIC21 Basic Biochemistry Unit II: Biomolecules A. Carbohydrates: 1) Monosaccharides : 2) Disaccharides : 3) Polysaccharides : B .Lipids : 1) Simple lipids - Fats, oils and waxes. 2) Compound lipids - Phospholipid, Glycolipids 3) Derived lipids - Cholesterol C. Nucleic Acids : 1) DNA - Structure and function. 2) RNA - Types , structure and functions.	Nil
	Practicals: 1. IMViC test 2. Detection of amylase activity 3. Detection of catalase activity	Practicals: 1. IMViC test 2. Detection of amylase activity 3. Detection of catalase activity	Nil
2	B. Sc. II Semester III A]Air Microbiology: iv) Sources of microorganisms in air.	B. Sc. II Semester III A]Air Microbiology: i) Sources of microorganisms in air.	Nil



<p>v) Definitions of-</p> <ul style="list-style-type: none"> a) Infectious dust, b) Droplets, c) Droplet nuclei <p>vi) Sampling methods for microbial examination of air -</p> <ul style="list-style-type: none"> c) Solid impaction-Sieve device d) Liquid Impingement–Bead-bubbler device <p>iv) Gnotobiology Introduction</p> <p>B] Bioinstrumentation: Principle, working and application of-</p> <ul style="list-style-type: none"> iv) Electrophoresis(Agarosegel, PAGE) v) UV–visible spectrophotometer. <p>C] Biostatistics:</p> <ul style="list-style-type: none"> v) Introduction vi) Data presentation–Tables and Graphs(Line and Histogram) vii) Central tendency :Mean, Median and Mode viii) Applications. <p>F] Bioinformatics: i) Introduction of basic terminologies-Database, Genomics and Proteomics Applications of bioinformatics.</p>	<p>ii) Definitions of-</p> <ul style="list-style-type: none"> a) Infectious dust, b) Droplets, c) Droplet nuclei <p>iii) Sampling methods for microbial examination of air -</p> <ul style="list-style-type: none"> a) Solid impaction-Sieve device b) Liquid Impingement–Bead-bubbler device <p>iv) Gnotobiology Introduction</p> <p>B] Bioinstrumentation: Principle, working and application of-</p> <ul style="list-style-type: none"> i) Electrophoresis(Agarosegel, PAGE) vi) UV–visible spectrophotometer. <p>C] Biostatistics:</p> <ul style="list-style-type: none"> i) Introduction ii) Data presentation–Tables and Graphs(Line and Histogram) iii) Central tendency :Mean, Median and Mode iv) Applications. <p>G] Bioinformatics: i) Introduction of basic terminologies-Database, Genomics and Proteomics Applications of bioinformatics.</p>	
<p>Practicals:</p> <ol style="list-style-type: none"> 5. Preparation of gelatin agar medium 6. Demonstration of gelatin hydrolysis test 7. Demonstration of growth curve of <i>E. coli</i> 8. Demonstration of diauxic growth curve of <i>E. coli</i> 	<p>Practicals:</p> <ol style="list-style-type: none"> 5. Preparation of gelatin agar medium 6. Demonstration of gelatin hydrolysis test 7. Demonstration of growth curve of <i>E. coli</i> 8. Demonstration of diauxic growth curve of <i>E. coli</i> 	<p>Nil</p>
<p>3. B.Sc. III Semester VI Paper VII: DSE1010F1 VIROLOGY Unit 1</p>	<p>B.Sc. III Semester VI Paper VII: DSE1010F1 VIROLOGY Unit 1</p>	<p>Nil</p>



Unit 2	Unit 2	
Practicals: 1. Isolation of coliphages from sewage 2. Genetic transformation 3. Isolation of chromosomal DNA from bacteria 4. Agarose gel electrophoresis	Practicals: 1. Isolation of coliphages from sewage 2. Genetic transformation 3. Isolation of chromosomal DNA from bacteria 4. Agarose gel electrophoresis	Nil


Mr. S. D. Gabale

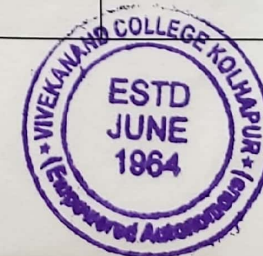



Dr. G. K. Sontakke
HEAD
DEPARTMENT OF MICROBIOLOGY
VIVEKANAND COLLEGE, KOLHAPUR
(EMPOWERED AUTONOMOUS)

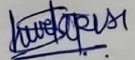
Shri Swami Vivekanand Shikshan Sanstha's
Vivekanand College, Kolhapur (Empowered Autonomous)
Academic Year 2023-2024
Syllabus Completion Report

Name of Teacher – Ms.S.A.Pise

Sr.No	Syllabus Allotted	Syllabus Completed	Remaining Syllabus
1.	B.Sc I Sem I DSC03MIC11 Introduction to Microbiology Theory Unit 2 – Bacterial Cell 1.Cell size,shape & arrangement - 2.Cytology of Bacteria - 3.Reserved Food material a.Nitrogenous b.Non nitrogenase Practicals – Microscopic observation of bacteria - 1. Monochrome staining 2. Negative staining 3. Gram's staining	B.Sc I Sem I DSC03MIC11 Introduction to Microbiology Theory Unit 2 – Bacterial Cell 1.Cell size,shape & arrangement - 2.Cytology of Bacteria - 3.Reserved Food material a.Nitrogenous b.Non nitrogenase Practicals – Microscopic observation of bacteria 1. Monochrome staining 2. Negative staining 3. Gram's staining	NIL
2.	B.Sc II Sem III Paper V DSC 1010C1 Microbial Physiology & Metabolism Theory Unit II – Molecular Biology A. Growth B. Effect of environmental factors on Microbial	B.Sc II Sem III Paper V DSC 1010C1 Microbial Physiology & Metabolism Theory Unit II – Molecular Biology A. Growth B. Effect of environmental factors on Microbial	NIL



<p>growth C.Transport across cell membrane</p> <p>Practicals – Effect of environmental factor on microorganisms: 1. Temperature 2. pH 3.Salt (NaCl)</p>	<p>growth C.Transport across cell membrane</p> <p>Practicals – Effect of environmental factor on microorganisms: 1. Temperature 2. pH 3.Salt (NaCl)</p>	
<p>3. B.Sc III Sem V DSE 1010 E2 Section II Microbial Biochemistry Theory</p> <p>Unit 1 Unit 2</p> <p>Practicals –</p> <p>1. Isolation of <i>Azotobacter</i> from soil. 2. Isolation of <i>Xanthomonas</i> from infected citrus fruits. 3. Isolation of <i>Rhizobium</i> from root nodules 4. Isolation of phosphate solubilising bacteria from soil. 5.Determination of BOD of sewage</p>	<p>B.Sc III Sem V DSE 1010 E2 Section II Microbial Biochemistry Theory</p> <p>Unit 1 Unit 2</p> <p>Practicals –</p> <p>1. Isolation of <i>Azotobacter</i> from soil. 2. Isolation of <i>Xanthomonas</i> from infected citrus fruits. 3. Isolation of <i>Rhizobium</i> from root nodules 4. Isolation of phosphate solubilising bacteria from soil. 5.Determination of BOD of sewage</p>	<p>NIL</p>


Ms. S.A.Pise




Dr.G.K.Sontakke
HEAD
DEPARTMENT OF MICROBIOLOGY
VIVEKANAND COLLEGE, KOLHAPUR
(EMPOWERED AUTONOMOUS)

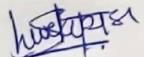
Shri Swami Vivekanand Shikshan Sanstha's
Vivekanand College, Kolhapur (Empowered Autonomous)
Academic Year 2023-2024
Syllabus Completion Report

Name of Teacher – Ms.S.A.Pise

Sr.No	Syllabus Allotted	Syllabus Completed	Remaining Syllabus
1.	B.Sc I Sem II DSC03MIC21 Basic Biochemisrty Theory Unit 1 – Protein <u>A. Proteins</u> 1.introduction to amino acid, peptide bond 2.Types of amino acids 3Stryctural levels of protein <u>B. Enzyme</u> 1.Defonation & types of enzyme 2.Concept of apoenzyme, coenzyme, cofactor & active site 3.Mechanism of enzyme action Practicals – Isolation of pure cultures of bacteria by four quadrant streaking method & studies of Colony characteristics, Gram staining and motility of- 1. <i>Escherichia coli</i> 2. <i>Bacillus species</i>	B.Sc I Sem II DSC03MIC21 Basic Biochemisrty Theory Unit 1 – Protein <u>A. Proteins</u> 1.introduction to amino acid, peptide bond 2.Types of amino acids 3Stryctural levels of protein <u>B. Enzyme</u> 1.Defonation & types of enzyme 2.Concept of apoenzyme, coenzyme, cofactor & active site 3.Mechanism of enzyme action Practicals – Isolation of pure cultures of bacteria by four quadrant streaking method & studies of Colony characteristics, Gram staining andmotility of- 1. <i>Escherichia coli</i> 2. <i>Bacillus species</i>	NIL
2.	B.Sc II Sem IV Paper VII DSC 1010D1 Microbial Genetics & Molecular Biology Theory	B.Sc II Sem IV Paper VII DSC 1010D1 Microbial Genetics & Molecular Biology Theory	NIL



	<p>Unit II – Molecular Biology A. Gene Transfer in Bacteria B.DNA Repair C.Plasmid</p> <p>Practicals – Stains and staining procedures: i) Spore staining (Dorner’s method) ii) Flagella staining (Bailey’s method) iii) Nucleus staining (Giemsa’s method) using yeast cells</p>	<p>Unit II – Molecular Biology A. Gene Transfer in Bacteria B.DNA Repair C.Plasmid</p> <p>Practicals – Stains and staining procedures: i) Spore staining (Dorner’s method) ii) Flagella staining (Bailey’s method) iii) Nucleus staining (Giemsa’s method) using yeast cells</p>	
3.	<p>B.Sc III Sem VI DSE 1010 F32 Agricultural Microbiology Theory Unit 1 Unit 2</p> <p>Practicals – 1. Estimation of Calcium and Magnesium from soil (EDTA method) 2.Determination of organic carbon content of soil (Walkley and Black method) 3.Determination of COD</p>	<p>B.Sc III Sem VI DSE 1010 F32 Agricultural Microbiology Theory Unit 1 Unit 2</p> <p>Practicals – 1. Estimation of Calcium and Magnesium from soil (EDTA method) 2.Determination of organic carbon content of soil (Walkley and Black method) 3.Determination of COD</p>	NIL


Ms. S.A.Pise





Dr. G.K. Sontakke
HEAD
DEPARTMENT OF MICROBIOLOGY
VIVEKANAND COLLEGE, KOLHAPUR
(EMPOWERED AUTONOMOUS)


Vivekanand College, Kolhapur (Empowered Autonomous)
 Department of Microbiology (UG)
 Syllabus Completion Report 2023-24

Name of teacher: Miss. Anjor A. Jadhav

Sr. No.	Theory/ Practical	Syllabus Allotted	Syllabus Completed	Incomplete Syllabus
1.	Theory	<u>B.Sc. I Semester: I (DSC03MIC12 Paper II Bacteriology)</u> Control of Microorganisms 1. Definitions 2. Mode of action and application of a) Physical agents: (i) Temperature (ii) Dessication (iii) Ultrasonication (iv) Radiations (v) Filtration b) Chemical agents: (i) Phenol and phenolic compounds (ii) Alcohols (iii) Halogen compounds (iv) Heavy metals (v) Fumigation by gaseous agents (vi) Osmotic Pressure	<u>B.Sc. I Semester: I (DSC03MIC12 Paper II Bacteriology)</u> Control of Microorganisms 1. Definitions 2. Mode of action and application of a) Physical agents: (i) Temperature (ii) Dessication (iii) Ultrasonication (iv) Radiations (v) Filtration b) Chemical agents: (i) Phenol and phenolic compounds (ii) Alcohols (iii) Halogen compounds (iv) Heavy metals (v) Fumigation by gaseous agents (vi) Osmotic Pressure	Nil
	Practical	As per syllabus	As per syllabus	Nil


 Signature of Teacher





 Signature of Head of Department
HEAD
 DEPARTMENT OF MICROBIOLOGY
 VIVEKANAND COLLEGE, KOLHAPUR
 (EMPOWERED AUTONOMOUS)


Vivekanand College, Kolhapur (Empowered Autonomous)
 Department of Microbiology (UG)
 Syllabus Completion Report 2023-24

Name of teacher: Miss. Anjor A. Jadhav

Sr. No.	Theory/ Practical	Syllabus Allotted	Syllabus Completed	Incomplete Syllabus
1.	Theory	<p><u>B.Sc. I Semester: II (DSC03MIC22 Paper II Microbial nutrition & techniques)</u></p> <p>A. Enrichment and isolation of micro organisms from natural environment</p> <ol style="list-style-type: none"> Pure culture techniques Isolation and cultivation of anaerobic organisms by using media components and by exclusion of air <p>B. Preservation of microbial cultures:</p> <ol style="list-style-type: none"> Subculturing Overlaying cultures with mineral oils Storage at low temperature Lyophilization <p>C. Systematic study of pure cultures</p> <ol style="list-style-type: none"> Morphological characteristics Cultural characteristics Biochemical characteristics Serological characteristics <p>D. Concept of Culture Collection Centres</p>	<p><u>B.Sc. I Semester: II (DSC03MIC22 Paper II Microbial nutrition & techniques)</u></p> <p>A. Enrichment and isolation of micro organisms from natural environment</p> <ol style="list-style-type: none"> Pure culture techniques Isolation and cultivation of anaerobic organisms by using media components and by exclusion of air <p>B. Preservation of microbial cultures:</p> <ol style="list-style-type: none"> Subculturing Overlaying cultures with mineral oils Storage at low temperature Lyophilization <p>C. Systematic study of pure cultures</p> <ol style="list-style-type: none"> Morphological characteristics Cultural characteristics Biochemical characteristics Serological characteristics <p>D. Concept of Culture Collection Centres</p>	Nil
	Practical	As per syllabus	As per syllabus	Nil


 Signature of Teacher



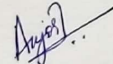

 Signature of Head of Department
HEAD
 DEPARTMENT OF MICROBIOLOGY
 VIVEKANAND COLLEGE, KOLHAPUR
 EMPOWERED AUTONOMOUS

लापूर.


Vivekanand College, Kolhapur (Empowered Autonomous)
 Department of Microbiology (UG)
 Syllabus Completion Report 2023-24

Name of teacher: Miss. Anjor A. Jadhav

Sr. No.	Theory/ Practical	Syllabus Allotted	Syllabus Completed	Incomplete Syllabus
2.	Theory	<u>B.Sc. III Semester: V (DSE 1010E2 -Paper VI- Industrial Microbiology and Microbial Biochemistry)</u> 1. Industrial Production of a) Amylase b) Grape wine c) Penicillin 2. Microbial Production of: a) Vitamin B12 b) Lysine amino acid 3. Probiotics 4. Downstream processing and product recovery a) Centrifugation 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	<u>B.Sc. III Semester: V (DSE 1010E2 -Paper VI- Industrial Microbiology and Microbial Biochemistry)</u> 1. Industrial Production of a) Amylase b) Grape wine c) Penicillin 2. Microbial Production of: a) Vitamin B12 b) Lysine amino acid 3. Probiotics 4. Downstream processing and product recovery a) Centrifugation 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	Nil
	Practical	As per syllabus	As per syllabus	Nil


 Signature of Teacher




 Signature of Head of Department
HEAD
 DEPARTMENT OF MICROBIOLOGY
 VIVEKANAND COLLEGE, KOLHAPUR
 (EMPOWERED AUTONOMOUS)

Vivekanand College, Kolhapur (Empowered Autonomous)
 Department of Microbiology (UG)
 Syllabus Completion Report 2023-24

Name of teacher: Miss. Anjor A. Jadhav

Sr. No.	Theory/ Practical	Syllabus Allotted	Syllabus Completed	Incomplete Syllabus
2.	Theory	<u>B.Sc. III Semester: VI (DSE-1010F2- Paper VIII- Agricultural and Environmental Microbiology)</u> 1. Biological Safety in Laboratory a. Good Laboratory Practices b. Bio safety levels (BSL) 2. Environmental monitoring a. Definition b. Clean room c. Routine environmental monitoring programme d. Bio burden test 3. Environmental Impact Assessment 4. Bioremediation and Bioleaching a. Bioremediation b. Bioleaching	<u>B.Sc. III Semester: VI (DSE-1010F2- Paper VIII- Agricultural and Environmental Microbiology)</u> 1. Biological Safety in Laboratory a. Good Laboratory Practices b. Bio safety levels (BSL) 2. Environmental monitoring a. Definition b. Clean room c. Routine environmental monitoring programme d. Bio burden test 3. Environmental Impact Assessment 4. Bioremediation and Bioleaching a. Bioremediation b. Bioleaching	Nil
	Practical	As per syllabus	As per syllabus	Nil

Anjor A. Jadhav

Signature of Teacher



G. P. K.

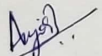
Signature of Head of Department

HEAD
DEPARTMENT OF MICROBIOLOGY
VIVEKANAND COLLEGE, KOLHAPUR
(EMPOWERED AUTONOMOUS)


Vivekanand College, Kolhapur (Empowered Autonomous)
 Department of Microbiology (UG)
 Syllabus Completion Report 2023-24

Name of teacher: Miss. Anjor A. Jadhav

Sr. No.	Theory/ Practical	Syllabus Allotted	Syllabus Completed	Incomplete Syllabus
1.	Theory	-	-	Nil
	Practical	<p><u>B.Sc. II Semester: III & IV (Paper IV Practical Course)</u></p> <p>1. Effect of environmental factor on micro organisms: 2. Primary Screening of: (i) Antibiotic producers (ii) Amylase Producers 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 5. Determination of growth phase of <i>E. coli</i> by Optical density 6. Study of Diauxic growth 7. Serological tests- Widal test-Qualitative Slide Test 8. Biostatistics 9. U.V. Survival Curve</p>	<p><u>B.Sc. II Semester: III & IV (Paper IV Practical Course)</u></p> <p>1. Effect of environmental factor on micro organisms: 2. Primary Screening of: (i) Antibiotic producers (ii) Amylase Producers 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 5. Determination of growth phase of <i>E. coli</i> by Optical density 6. Study of Diauxic growth 7. Serological tests- Widal test-Qualitative Slide Test 8. Biostatistics 9. U.V. Survival Curve</p>	Nil


 Signature of Teacher




 Signature of Head of Department
HEAD
 DEPARTMENT OF MICROBIOLOGY
 VIVEKANAND COLLEGE, KOLHAPUR
 (EMPOWERED AUTONOMOUS)