

**Lal Bahadur Shastri College of Arts Science and Commerce, Satara.**

**DEPARTMENT OF MICROBIOLOGY**

**Course Outcomes**

<b>Sr. No</b>	<b>Class</b>	<b>Course code</b>	<b>Title of the paper</b>	<b>Objectives</b>
1.	<b>B.Sc I</b>	DSC- 25 A	Introduction to Microbiology	1) To explain the useful and harmful activities of the Microorganisms and scope of different branches of Microbiology
		DSC- 26 A	Basic Techniques in Microbiology	1) To study the working principle, handling and use of microscopes for the study of microorganisms
		DSC –25 B	Bacteriology	1) To describe the nutritional requirements of bacteria and other microbes which grow under extreme environments.
		DSC –26 B	Microbial Biochemistry	1) To develop the knowledge of how the carbohydrates make the structural and functional components such as energy generation and as storage food molecules for the bacterial cells
		Practical	Paper I &II: Introduction to Microbiology and Basic Techniques in Microbiology	1) To understand the basic techniques in Microbiology laboratory 2) To study the working principle, handling and use of compound microscope for the study of microorganisms
			Paper III & IV: Bacteriology and Microbial Biochemistry	1) To understand the basic laboratory experiments to isolate and cultivate 2) To study various biochemical tests used to differentiate bacteria





2.	B.Sc II	DSC-C 25	Microbial Physiology & Metabolism	<ol style="list-style-type: none"> <li>1) To develop[ a good understanding regarding effect of environmental factors on growth of microorganisms</li> <li>2) To understand the mechanism of transport across microbial cell membrane.</li> </ol>
		DSC-C 26	Applied Microbiology	<ol style="list-style-type: none"> <li>1) To study water microbiology, water analysis and its purification and disinfection.</li> <li>2) To learn the basic understanding of industrial microbiology</li> </ol>
		DSC-C 25	Microbial Genetics & Molecular Biology	<ol style="list-style-type: none"> <li>1) To demonstrate the model of gene transfer in bacteria.</li> <li>2) To gain the knowledge about DNA repair and Lac operon</li> </ol>
		DSC-D 26	Basics in Medical Microbiology & Immunology	<ol style="list-style-type: none"> <li>1) To learn about basic concept of medical microbiology.</li> <li>2) To make aware students about disease.</li> <li>3) To understand the defense mechanism of vertebrate body.</li> </ol>
		Practical I	Paper V & VI Microbial Physiology & Metabolism and Applied Microbiology	<ol style="list-style-type: none"> <li>1) To study the biochemical characteristics of different microorganisms.</li> <li>2) To study the effect of environmental factors of microorganisms</li> </ol>
		Practical II	Paper VII & VIII Microbial Genetics & Molecular Biology and Basics in Medical Microbiology & Immunology	<ol style="list-style-type: none"> <li>1) To study the techniques of bacteriology analysis of water.</li> <li>2) To understand the primary screening techniques of industrially important microorganisms.</li> </ol>





3	B.Sc III	Course IX DSE - E 49	Virology	<ol style="list-style-type: none"> <li>1) To expose the students to different processes used in industries and in research field</li> <li>2) To prepare the students to accept the challenges in life sciences.</li> <li>3) To develop skills required in various industries, research labs and in the field of human health.</li> <li>4) Experiential learning</li> </ol>
		Course X (DSE E 50)	Immunology	<ol style="list-style-type: none"> <li>1) To gain knowledge about different Immunological technique .</li> <li>2) To study Antibody production .</li> <li>3) To learn about concept of antigen and antibody.</li> </ol>
		Course XI (DSE E 51)	Food and Industrial Microbiology	<ol style="list-style-type: none"> <li>1) To learn various fermentation process</li> <li>2) To study food preservation technique</li> <li>3) To gain knowledge about down stream process for product recovery.</li> </ol>
		Course XII (DSE E 52)	Agricultural Microbiology	<ol style="list-style-type: none"> <li>1) To learn about plant diseases</li> <li>2) To expose the students to different processes for production of Bio fertilizers.</li> <li>3) To gain knowledge about various soil properties.</li> </ol>
		Course XIII (DSE F 49)	Microbial Genetics	<ol style="list-style-type: none"> <li>1) To study about Gene regulation.</li> <li>2) To get knowledge about genetic engineering and its future aspects.</li> <li>3) To study various techniques used in Genetics.</li> </ol>
		Course XIV (DSE F 50)	Microbial Biochemistry	<ol style="list-style-type: none"> <li>1) To get knowledge about Microbial cell metabolism.</li> <li>2) To study about working principles, extraction and Purification of Enzymes</li> <li>3) To gain knowledge about biosynthesis of Biomolecules.</li> </ol>
		Course XV (DSE F 51)	Environmental Microbiology	<ol style="list-style-type: none"> <li>1) To study various Sewage treatment.</li> <li>2) To aware students about Biological safety in laboratory.</li> <li>3) To get knowledge about Environmental Impact Assessment .</li> </ol>
		Course XVI (DSE F 52)	Medical Microbiology	<ol style="list-style-type: none"> <li>1) To study various Diseases.</li> <li>2) To get knowledge about Chemotherapy and Drug resistants.</li> <li>3) To aware students about different types of Vaccines.</li> </ol>





	Practical I	Virology and Microbial Genetics	<ol style="list-style-type: none"> <li>1) To study effect of U.V. light antibiotic on bacteria and</li> <li>2) carcinogenicity test</li> <li>3) Isolation of Mutants.</li> </ol>
	Practical II	Food and Industrial Microbiology	<ol style="list-style-type: none"> <li>1) To study Bioassay of Vitamin and Antibiotic.</li> <li>2) To study method of Milk.</li> <li>3) To get knowledge about Enzyme production.</li> </ol>
	Practical III	Agricultural Microbiology and Environmental Microbiology	<ol style="list-style-type: none"> <li>1) To isolate Nitrogen fixer bacteria.</li> <li>2) To isolate plant disease causing organism</li> <li>3) Study of methods to check dissolved oxygen levels.</li> <li>4) To study methods to check mineral levels in soil</li> </ol>
	Practical IV	Medical Microbiology	<ol style="list-style-type: none"> <li>1) Isolation of Pathogen</li> <li>2) To study minimum inhibitory concentration of antibiotics.</li> <li>3) To study serological tests and urine analysis.</li> </ol>



  
**Head**  
 Department of Microbiology,  
 L. B. S. College of Arts Sci. & Comm., Satara