

## Course Outcome

| Course                              | Course outcome   |
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| FUNDAMENTALS OF MICROBIOLOGY        | Students will be able to understand how microbiology developed and what is the scope of microbiology. to know the beneficial and harmful properties of microorganisms. Students will be acquainted with the basic concept of prokaryotes, their taxonomy. To study staining techniques, culture media and culture methods. to study the physical and chemical methods of sterilization techniques. to know the classification and mode of action of antibiotics.   |
| MICROBIAL PHYSIOLOGE AND METABOLISM | On successfully completing the Its an advanced course where students get to know about the microbes in extreme environment, their mode of functioning under stress. Besides this, they are acquainted with prokaryotic photosynthetic machinery in detail and the knowledge gained can be applied for enhancing the efficiency of plants.<br>students will be able to demonstrate a knowledge and understanding of: The basic principle of biochemistry including important molecules their economic and scientific importance inside the cell. The students will be able to understand the biochemical pathways of synthesis and degradation of these molecules and the transport of different metabolites generated with application in industrial processes |
| IMMUNOLOGY                          | Course acquaints students with basic concept of immunity and its application.  |
| MICROBIAL GENETICS                  | To study about plasmids and gene transfer mechanisms, also to understand about mutations   |
| BIOINSTRUMENTATION AND TECHNIQUES   | To understand about principle and application of microscopy, students will be able to understand centrifugation, colorimetry and turbidimetry  |
| INDUSTRIAL MICROBIOLOGY             | On successfully completing the module, students will be able to demonstrate a knowledge and understanding of: Basic fermentations processes, design of various fermenters and their types. Different separation techniques and application of fermentation in waste treatment. Students will be able to select industrially important microbes for economical use including protein products. Finally students will learn the economics of the fermentation for the total cost of production. IM 202 Microbial Products for Human Consumption 0  |
| FOOD MICROBIOLOGY                   | this is a basic course offered to the students This course acquaints students with various types of food contamination and spoilage by different microorganisms and their preservation techniques.<br>Microbial toxins and food protection will be having knowledge of microbes and their importance, application in day to day life with special reference to food. This course acquaints students with various industrial and food products, their production techniques and prevention of spoilage. Besides this, this course is coupled to an industrial visit also.   |

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| FUNDAMENTALS OF BIOSTATISTICS, BIOINFORMATICS AND RESEARCH METHODOLOGY | Student will be able to apply statistics to the experiments being carried out by them, besides this they will be acquainted with the basics of bioinformatics, a science that is of utmost use in fast changing world of research.   |
| AQUATIC MICROBIOLOGY   | students will be able to understand the aquatic environment and distribution of microorganism in aquatic environment.to understand various techniques for the study of aquatic microorganisms, water pollution, waterborne diseases and control measures.  |
| AGRICULTURAL MICROBIOLOGY  | On successfully completing the module, students will be able to demonstrate a knowledge and understanding of: Concept of microbial interactions, microbial diseases of plants, biofertilizers, Biopesticides, production and their application. Concept of Bt technology, development and its application. Concept of Composting and biofuels, types and applications. |
| MEDICAL BACTERIOLOGY 1   | Detailed study of common bacterial pathogens   |
| MEDICAL MYCOLOGY   | Detailed study of common fungal pathogens.   |
| MEDICAL PARASITOLOGY   | Detailed study of common protozoans and helminths.   |
| MEDICAL VIROLOGY   | Detailed study of common viral diseases  |
| DIAGNOSTIC MICROBIOLOGY  | Detailed study of laboratory associated infections, microbiological examination of clinical specimens, serological diagnosis and antibiotic tests  |
| SANITATION MICROBIOLOGY  | This is an open course offered to the students of studying the course will be having knowledge of microbes and their importance, application in day to day life with special reference to environmental sustainability and industry.   |
| PROJECT WORK   | Students are encouraged to undertake research on their area of interest in Microbiology. This training acquaints students with identification of a research topic, research planning and its execution.  |
| MICROBIOLOGY PRACTICAL 1   | Student will be equipped with the knowledge to handle microbes and basic instrumentation used in microbiological laboratory. Various basic techniques to isolate, characterize the microbes morphologically will be known to them.   |
| MICROBIOLOGY PRACTICAL 2   | ISOLATION AND ENUMERATION OF MICROORGANISM FROM SOIL SAMPLE. STUDY OF MICROBIAL CONTAMINATION IN FOOD PRODUCTS.MBRTThis practical course focuses on milk and milk product testing for microbiological quality besides training students on quality control, MPN, mushroom cultivation, Estimation of BOD.  |

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| MICROBIOLOGY<br>PRACTICAL 3   | Identification of bacteria, cultivation and study of fungus, serological techniques.  |
| Environmental<br>microbiology | This paper deals with multidisciplinary nature of environmental studies, different ecosystems, biodiversity and its conservation, environmental pollution and social issues and the environment. . Management of wastewater using various techniques. Student will have the basic background of handling wastewater and its treatment. Besides this student will be acquainted with human rights. |