Core Course Outcome

Microbiology

Paper	Course Outcome
General Microbiology	● Knowledge on historical perspective of Microbiology ● Awareness on structure of microbes ● Idea on different types of microscopic and sterilization methods
Microbial Physiology and Taxonomy	● Knowledge on factors affecting the microbial growth ● Basic knowledge on cultivation of microbes ● Awareness on growth, quantitation and reproduction of microbes
Environmental and Sanitation Microbiology	● Knowledge on air and water microbiology ● Understand the role of microorganisms in solid waste management and bioremediation ● Awareness on the methods in water analysis and waste water treatment
Soil and Agricultural Microbiology	● Knowledge on soil microbes and their role in soil fertility and nutrient cycling ● Understanding the interactions of microorganisms with plants and animals ● Awareness on use of microbes as biofertilizers and biopesticides
Microbiology Practical I	● Expertise in basic techniques of microbiology ● Knowledge on microbial growth and conditions affecting it ● Understanding on microbial analysis of environmental samples
Industrial Microbiology	● Knowledge on upstream and downstream processes in fermentation ● Expertise to work in fermentation industry ● Understanding on intellectual property rights
Food and Dairy Microbiology	● Better understanding of microbes in food spoilage ● Information regarding food preservation ● Expertise on techniques used in food industries
Immunology	● Information about immune system and its action ● Knowledge on immunodiagnostic methods ● Awareness on hypersensitivity, autoimmune diseases and cancer
Medical Microbiology-I	● Information about mechanisms of infection ● Knowledge on clinical lab techniques ● Awareness on control measures of diseases
Microbiology Practical II	● Practical knowledge in specimen collection and processing ● Technical expertise to work in clinical laboratory ● Ability to perform immunological and medical

	diagnosis to identify pathogens
Genetics and genetic engineering	● Awareness on Mendelian genetics, linkage, crossing over,cell cycle and apoptosis ● Understanding the concepts of gene transfer, gene mapping and rDNA technology ● Knowledge about DNA sequencing and amplification methods, gene therapy and GM foods.
Microbiology Practical III	● Expertise in buffer preparation ● Trained in isolation and estimation of nucleic acids ● Familiarity in rDNA technology
Microbiology Practical IV	● Knowledge in relationship between food and microbes, techniques used in food processing ● Trained in production of industrially relevant products ● Ability to perform microbiological testing of food samples
Elective- Cell and Tissue culture	● Information about laboratory cultivation and application of plant and animal cell culture ● Knowledge on plant regeneration and somaclonal variation and its application in crop improvement organogenesis. ● Awareness on Protoplast technology and specific gene transfer
Elective- Molecular Biology	● Elaborate knowledge on nucleic acids ● Better understanding of DNA replication, Transcription and Translation ● Knowledge on gene regulation in prokaryotes – operon concept
Elective- Bioinstrumentation	● Understanding of various techniques used in different branches of life science/biotechnology and the underlying principles ● Knowledge on operational procedures of instruments for analytical works. ● Application of bio-analytical techniques in advanced studies/research and other industrial applications.
Project	● To develop research aptitude among students. ● To familiarize with the practical and industrial aspects of Microbiology