

Course Outcomes of Microbiology

Microbiology since its advent has played a pivotal role in the field of modern scientific teaching and research. It encompasses the varied areas from traditional biology to environment, agriculture, food, pharma, industrial production, medicine and genetic research to the most advanced nanotech and cosmology.

At first year of under-graduation, students are having two theory papers & one practical paper I has. The detail studies of morphological, structural characterization, isolation techniques from natural and extreme environments and their prominent features. More focus is done on use of microscope & different microscopy techniques .paper two deals with general microbiology & techniques where pure culture & cultivation techniques, sterilization & staining techniques are taken in detail in sem. II Paper IV has basic aspects of cytology & physiological aspects which deals with microbial growth , nutrition & advanced microbiology which includes nanotechnology genetic engineering & bioinformatics Paper V has Introduction to biochemical characterization of components of microorganism e.g. proteins, lipids, nucleic acids and carbohydrates

In the second year sem. III & sem. IV includes two theory & respective two practical each (sem. – III) has paper VII namely environmental microbiology which includes environmental aspects of air, water& waste water, soil microbiology & environmental pollution paper VIII includes basic aspects of immunology including normal flora immune system components, the antigen & antibody & their reactions practical paper includes practicals on respective praacticals.

Sem. IV includes paper IX titled applied microbiology which covers applied aspects of milk , food, food spoilage & preservation ,cheese making & probiotics paper X includes clinical microbiology stressing on different

bacterial, virus, protozoal diseases the practical papers XI & XII deals with respective practicals

In the third year sem. V & VI again includes two theory & two practicals for each sem.

In sem. V (paper XV & XIV & Practicals Paper XVII & XVIII) Paper XIV Microbial genetics includes properties of genetic material DNA & RNA replication, expression of genes, the mutations & different recombination techniques

Paper XIV includes microbial metabolism including enzymes, anabolic & catabolic pathways, bioenergetics, remaining two papers are of concerned practicals

The last sem. VI (Paper XIX, XX, XXI,XXII) first paper namely recombinant DNA technology includes restriction enzymes , vectors & properties, DNA amplification & cloning techniques

The last paper XX is industrial microbiology focuses on industrial fermentation technologies, production of industrial fermented products the practicals are on the respective papers.