

## COURSE OBJECTIVES AND COURSE OUTCOMES

### S. Y. B. Sc. SEMESTER - III

#### SUBJECT: MICROBIOLOGY PRACTICAL (USMBP3)

Sr. No.	Course Objectives	Course Outcomes
1)	To apply knowledge of the principles associated, sensitivity and drawbacks of the methods for estimation of macromolecules like carbohydrates, proteins and nucleic acids	Students will become competent to use protocols for the estimation of elements and macromolecules in living cells
2)	To identify new isolates of bacteria making use of Bergey's Manual of Determinative Bacteriology	The experiment on the identification of bacteria will teach students how to use Bergey's Manual of Determinative Bacteriology.
3)	To recommend the significance of biochemical tests based on the production of unique enzymes and their use in the diagnosis of pathogens	The study of biochemical tests for the identification of bacteria will expose them to Diagnostic Microbiology.
4)	To investigate contamination of water samples through the routine analysis of potable water	They will learn to carry out routine analysis of potable water and rapid detection of E coli by MUG technique.
5)	To analyze the various parameters used in waste water microbiology	The practical on waste water analysis especially estimation of BOD and COD will help students realize the practical significance of these parameters.
6)	To assess the quality of air before and after fumigation with a disinfectant by sampling of air for microorganisms.	Students will learn sampling of microbes from the air and get to study new organisms apart from standard preserved cultures

## COURSE OBJECTIVES AND COURSE OUTCOMES

### S. Y. B. Sc. SEMESTER - IV

#### SUBJECT: MICROBIOLOGY PRACTICAL (USMBP4)

Sr. No.	Course Objectives	Course Outcomes
1)	To justify the use of various enrichment, selective and differential media to enrich and isolate various physiological groups from natural environments as well as clinical specimens.	The knowledge of isolation of various physiological groups of bacteria from soil will help them in screening bacteria for future research activities.
2)	To instil a sense of scientific curiosity by preparing the Winogradsky's column and observing it daily for different types and colours of growth and other changes occurring in the column for a period of 6-8 weeks	Preparation and study of Winogradsky's column will help them to learn to mimic environmental conditions in the lab and study microorganisms as they occur in natural habitats.
3)	To inspect spoilage of foods, isolation of extracellular enzyme producers which degrade specific nutrients is included	The students will have a fair knowledge of food spoilage and preservation techniques used in food industry.
4)	To apply the knowledge of enzyme kinetics, effect of environmental parameters on one enzyme is included	Enzyme kinetic studies will help students understand the behaviour of enzymes under different conditions
5)	To illustrate the principle of chromatography, amino acids are separated and identified from a mixture using paper chromatography.	The use of preliminary instruments like centrifuge and electrophoresis apparatus will help them to acquire analytical skills.
6)S	To assess the quality of milk and milk products through rapid platform tests and other microbiological tests as per FSSAI	They will be competent to take up the role of microbiologists in the food and dairy industry.