

## **BSP458 APPLIED MICROBIOLOGY LAB**

### **Course Outcomes:**

*After successful completion of the course, students will be able to :*

- CO 1. Carry out quantitative and qualitative assessments of microflora of soil, water and air.
- CO 2. Selectively isolate and identify microbes using morphological and biochemical tools.
- CO 3. Understand the symbiotic association of microorganisms through experiments.
- CO 4. Assess microbial quality of drinking water and milk.
- CO 5. Perform microbiological assays for antibiotics and amino acids.

- 1. Quantitative and qualitative assessment of microflora of soil, water and air by direct and indirect methods.
- 2. Selective isolation of microbes (bacteria, actinomycetes, yeasts and fungi)
- 3. Studies on symbiotic association of microorganisms (rhizobia, cyanobacteria and arbuscular mycorrhizae)
- 4. Simple and special morphological and biochemical tests for identification of bacteria, fungi
- 5. Assessment of microbial quality of drinking water and milk
- 6. Microbiological assays (antibiotics and amino acids)

## **BSP459 AQUATIC BIOLOGY LAB**

### **Course Outcomes:**

*After successful completion of the course, students will be able to :*

**CO 1. Perform qualitative analyses of water samples for various parameters.**

CO 2. Identify freshwater, marine and benthic organisms

**CO 3. Estimate the productivity of aquatic ecosystems.**

**CO 4. Understand the food and feeding habits in fish.**

- 1. Water quality parameters**
- 2. Freshwater, marine and benthic organisms.
- 3. Preparation of temporary and permanent slides of plankton.
- 4. Estimation of productivity.**
- 5. Hydrophytes, halophytes and seaweeds.
- 6. Food and feeding habits in fish.**
- 7. Sewage organisms.
- 8. Instrumentation in aquatic biology and field trips**

## **BSP460 METABOLISM AND BIOENERGETICS**

### **Course Outcomes:**

*After successful completion of the course, students will be able to :*

CO 1. Perform spectrophotometric estimation of various metabolites.

CO 2. Diagnose some of the metabolic diseases through biochemical tests.

CO 3. Quantify vitamins and phenolics in plant samples.

CO 4. Calculate standard free energy change, redox potential, and mitochondrial respiration.

- 1. Spectrophotometric estimation of metabolites: serum protein, sugar, creatinine, urea, uric acid
- 2. Colorimetric analysis of vitamins, ascorbic acid etc.,
- 3. Estimation of plant phenolics
- 4. Tests to measure glycosuria, proteinuria etc
- 5. Calculations in Bioenergetics: standard free energy change, redox potential, mitochondrial respiration etc