Course Code	Course Name	Credits
26ZY653	IMMUNOLOGY, MICROBIOLOGY AND ECOLOGY LAB	02

Objective

To provide practical knowledge on immunological techniques, microbial culture methods and ecological analysis through laboratory and field studies.

Practicals

1. Study of microbiology and immunology laboratory instruments.
2. Preparation and sterilization of culture media.
3. Sterilization techniques – dry heat, moist heat and filtration methods.
4. Preparation of bacterial smears and simple staining techniques.
5. Gram staining of bacteria.
6. Observation of bacterial motility by hanging drop method.
7. Culture and identification of common microorganisms.
8. Enumeration of bacteria by serial dilution method.
9. Antibiotic sensitivity test using disc diffusion method.
10. Study of microbial growth curve.
11. Observation of fungi and yeast using temporary mounts.
12. Identification of pathogenic and beneficial microorganisms.
13. Blood grouping and antigen–antibody reaction studies.
14. Demonstration of agglutination and precipitation reactions.
15. ELISA and immunodiffusion techniques through demonstration/models.
16. Estimation of dissolved oxygen and biological oxygen demand in water.
17. Study of plankton diversity in freshwater ecosystems.
18. Quadrat method for ecological population analysis.
19. Determination of soil pH and ecological factors in terrestrial habitats.
20. Field visit and preparation of ecological and microbial survey report.

Students are required to perform and record at least eight experiments in the laboratory manual as part of the course requirements.