MANGALORE UNIVERSITY

DEPARTMENT OF BIOSCIENCE

BSP410 BIO-ANALYTICAL TECHNIQUES LAB

Course Outcomes:

After successful completion of the course, students are able to:

- Develop the technical skill handling and operation of various advanced instruments in Biology.
- Know how to separate the mixtures by planar and column chromatographic techniques.
- Undertake quality analyses required in food industry by identifying additives, vitamins, preservatives, proteins, sugars and amino acids.
- Understand the Beer Lambert's law and how to operate UV-Visible Spectrophotometry for estimation.
- Operate of flame photometry, amino acid analyser and HPLC.
- Perform different electrophoresis techniques for separation and determination of molecular weight.
- Gain the skill to perform ELISA for quantification of antigens.
- Perform immune-diffusion as a diagnostic tool for detection of antibodies and antigens.
- Carry out experiments using centrifuge for separation of molecules.
- Demonstrate the biophysical methods for structure elucidation.

1. Ascending, descending and circular paper chromatography for separation of amino acids/carbohydrates
2. TLC of amino acids (1D and 2D)/carbohydrates
3. UV-Visible Spectrophotometry-verification of Beer Lambert's law
4. Flame photometry and its application in the estimation of serum, calcium, potassium and lithium and sodium.
5. HPLC (Demonstration)
6. Gel electrophoresis- native and SDS-PAGE and estimation of molecular weight of Proteins
7. ELISA for quantification of an antigen.
8. Immunodiffusion
9. Amino acid analyser
10. Western blotting
11. Isoeletric focussing
12. Centrifuge use and application of centrifugations techniques for separation
13. Demonstration of biophysical methods for structure elucidation