

Subject Code: 2SC1010403	Subject Title: Biotechnology Practical
Course Type: Core Course	

Course Objective: This course is designed to enable students to acquire hands on training of instruments and techniques related to analysis of processes & products and the separation procedures routinely used in biotechnology laboratories and industries

Teaching scheme (hours) per week		Credit			Theory Marks		Practical Marks		Total
Theory	Practical	Theory	Practical	Total	Uni. Assessment	Cont. Assessment	Uni. Assessment	Cont. Assessment	
-	6	-	3	3	-	-	60	40	100

List of Biotechnology Practicals

1. Compute component of given percentage solution, molarity, Normality, molality and dilutions of solutions.
2. Isolation (genomic DNA) from bacterial cells.
3. Isolation of Plasmid DNA.
4. Agarose gel electrophoresis of genomic DNA & plasmid DNA.
5. Isolation of plant DNA. of chromosomal
6. Isolation of DNA from yeast cells.
7. Quantification of DNA/RNA by spectrophotometry.
8. Principles of Colorimetry: (i) Verification of Beer's law
(ii) To determine maximum absorption spectra of colored solution.
9. Chromatography: i) Solvent-solvent extraction of plant pigments
ii) Use of paper chromatography for separation of plant pigments
iii) Separation of Amino acids by paper chromatography.
iv) TLC of Amino acids
v) Demonstration of Ion-exchange chromatography
vi) Demonstration of Gel-exclusion chromatography
10. Centrifugation: Preparation of the sub-cellular fractions
11. Electrophoresis: i) Native gel electrophoresis of proteins
ii) SDS-polyacrylamide slab gel electrophoresis of proteins under reducing conditions.

Learning Outcome:

Development of skills related to handling of instruments. Enabling the students to design & standardize various analyses, processes and separation techniques.