

Course contents for Laboratory Techniques-II

1. **Faculty:** FLSB
2. **Course Code:**
3. **Course Title:** Laboratory Techniques-II
4. **Number of Credits:** Eight
5. **Course Structure:**

S.No	Title of the experiments (1st Year 2nd Semester)
1	Competent cell preparation and transformation
2	PCR amplification of a given DNA using gene specific primers
3	Agarose gel analysis of PCR amplification product
4	Purification of PCR product using a Gel extraction kit
5	Ligation of PCR product into pGEM-T vector
6	Transformation of ligated pGEM-T DNA into competent cells
7	Analysis and inoculation of transformed colonies in LB media
8	Isolation of DNA using miniprep DNA isolation kit
9	Screening of positive clones by Restriction digestion of DNA and colony PCR
1	Plant Genomic DNA isolation, Quantification and agarose gel analysis
2	RNA isolation, its quantification and Quality check
3	Reverse Transcription: First strand cDNA synthesis
4	Genomic DNA PCR, RT-PCR and Real time PCR
5	Agrobacterium Competent Cell preparation and its transformation
6	Agrobacterium transformation of Arabidopsis plant (Floral dip method)
1	WBC count in Haemocytometer by WBC diluting fluid.
2	Differential WBC count using Leishman stain.
3	Ouchterlony Double Diffusion (For Antibody Titration)
4	ELISA
5	Introduction to Flow cytometry
6	Discrimination of live and dead cells by Propidium iodide staining.
7	Phenotype study of B and T-cells in murine spleen
8	B lymphocyte cell cycle using Flow cytometry
9	Uptake of BCG by peritoneal macrophages.
1	Immobilization of Amylase by calcium alginate entrapment method and its activity check by DNS method
2	Enzyme purification (Amylase) by Ammonium sulphate salt precipitation method, purified protein conc. estimation by Bradford method and Amylase assay by DNS method
3	Baker's Yeast Fermentation of sugars (Glucose and Xylose) for Ethanol production , estimation of the sugar conc. in samples and Ethanol production estimation by Gas Chromatography