Unit I: Techniques in Microbiology and Plant tissue culture.


Techniques of plant tissue culture and cell culture: Explant culture, anther and pollen culture, protoplast culture and protoplast fusion.

Unit II: Instrumentation.

Spectroscopy: Basic principles and applications of UV-Vis and Spectrofluorophotometry.
Chromatography: Principle, design and applications of TLC, GC and HPLC.
Centrifugation: Basic principles and types.
Electrophoresis: Basic principles and types.

Unit III: Techniques in Plant Physiology and Environmental monitoring.


Unit IV: Techniques in Animal Physiology and Immunology.


Production of antibodies from laboratory animals. Monoclonal antibodies. Western blot and methods of band detection. Isolation of various immune cells and their functional assays. ELISA.

Unit V: Techniques in Molecular biology.

Isolation, purification and separation of nucleic acids. Hybridization techniques—Southern and Northern blotting. Polymerase chain reaction and its application. DNA sequencing methods (Sanger, Maxum-Gilbert). Microarray and RT-PCR.
Title of the CBCS course : "TECHNIQUES IN LIFE SCIENCES"

3 Credit

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