

PRACTICALS (HARD CORE COURSES)

BIOCHEMISTRY AND BIOPHYSICS

Course outcomes:

After successful completion of the course, students will be able to:

- CO 1. Have hands-on training and develop practical skills
- CO 2. Work independently
- CO 3. Perform assays and various techniques used in Biochemistry and Biophysics
- CO 4. Execute application-based learning

GLP, Safety practices

Titration of amino acid Glycine

Qualitative analysis of amino acids, proteins, sugars, lipids

Extraction of casein from milk by isoelectric precipitation

Estimations of proteins by Biuret method

Estimation of sugars by DNS method

Animal Handling techniques for biochemical assays

MOLECULAR CELL BIOLOGY

Course outcomes:

After successful completion of the course, students will be able to:

- CO 1. Acquire practical skills in cell biology
- CO 2. Learn preparation of slides
- CO 3. Acquire skills in quantitative assays of biomolecules
- CO 4. Learn separation of subcellular organelles using centrifugation

Microscopy, micrometry, microtomy

Study of mitosis and meiosis in plants and animals

Preparation of mitotic chromosomes and karyotyping

Staining techniques: Staining blood cells, total count and differential count

Histology and differential staining (cellular organelles and components)

Brushborder membrane

Studies on nerve impulses

Isolation of RNA and DNA

Estimation of RNA and DNA

Isolation and staining of salivary gland chromosomes in *Drosophila*

Demonstration of Barr bodies in buccal cells

MICROBIOLOGY

Course outcomes:

After successful completion of the course, students will be able to:

- CO 1. Have hands-on training and practical skills in microbiology
- CO 2. Use safety equipment in microbiology
- CO 3. Develop skills in isolation and culture of microorganisms from different sources
- CO 4. Carry out staining and identification of microorganisms

Microscopic observations of microorganisms

Microbial staining techniques (simple and differential staining, cell wall, endospores, intracellular lipids, acid-fast, flagella, viability)