

Bio - Chemistry

Semester-II

Course Code:

6 credits (4+2)

Course Title: *Cell Biology, Microbiology & Immunology*

4 credits

UNIT -I: BIOMEMBRANES

Biomembranes: Composition, Structure (Bilayer-Fluid Mosaic Model etc.) and functions, Membrane Transport (Active and Passive), Porters, Extra-Cellular matrix.

UNIT-II: CELL BIOLOGY-I

Structure of Prokaryotic and Eukaryotic Cell, Structure and functions of Nucleus (Chromatin, nucleolus etc), Endoplasmic Reticulum, Ribosomes, Mitochondria.

UNIT-III: CELL BIOLOGY-II

Golgi Apparatus and Packaging, Lysosomes, Peroxisomes, Cytoskeleton (Microtubules).

Overview of Cell division (Mitosis & Meiosis)

UNIT-IV: BACTERIOLOGY & IMMUNOLOGY

Structure & Classification of Bacteria (Gram +ve & -ve), Bacterial Cell Wall, Growth Cultures and Media.

Innate & Adaptive Immunity, Antigen-Antibody Interactions, Blood Grouping.

LABORATORY COURSE-II:

2 credits

1. Preparation of Culture Media.
2. Sterilization Techniques.
3. Staining of Gram +ve & Gram -ve bacteria.
4. Blood Grouping.
5. Collection of various medicinal plants and assessment of their anti-bacterial activity.

Books Prescribed:

1. Cell & Molecular Biology by Lodish et. al.
2. Cell Biology by Karp et. al.
3. Cell Biology by Sadava et. al
4. Textbook of Microbiology by Davis et. al.
5. Immunology by Kubly et.al.
6. Laboratory Manual for Biochemistry and Biotechnology by Syed Eazaz Hussain.
7. An Introduction to Practical Biochemistry by Plummer.