MINOR (MI)

MI – 3: Plant Science-III **Credits 04 (Full Marks: 75)**

MI – 3T: Plant Science-III **Credits 03** **[45L]**

Cell Biology

Course contents:

UNIT	Topic	No. of Lectures
1	**Cell as a unit of Life-** The Cell Theory; Prokaryotic and eukaryotic cells; Cell size and shape; Eukaryotic Cell components.	15
2	**Cell Organelles-** Structure and function of cell organelles: Chloroplast, Mitochondria, Ribosomes, Endoplasmic reticulum. **Cell Membrane and Cell Wall-** The functions of membranes; Models of membrane structure; The fluidity of membranes; Membrane proteins and their functions; Carbohydrates in the membrane; Faces of the membranes; Selective permeability of the membranes; Cell wall.	15
3	**Cell Cycle-** Overview of Cell cycle, Mitosis and Meiosis. Fundamental differences between mitosis and meiosis. Synaptonemal complex, mitotic spindle, significance of meiosis.	15

MI – 3P: Plant Science-III (Practical) **Credits 01**

Course Outline

1. To study prokaryotic cells (bacteria), viruses, eukaryotic cells with the help of light and electron micrographs.
2. Study of the photomicrographs of cell organelles.
3. To study the structure of plant cell through temporary mounts.
4. Study of mitosis and meiosis (temporary mounts and permanent slides).
5. Study the effect of temperature, organic solvent on semi permeable membrane.
6. Demonstration of dialysis of starch and simple sugar.
7. Study of plasmolysis and deplasmolysis on *Rhoeo* leaf.
8. Measure the cell size (either length or breadth/diameter) by micrometry.