

# **COURSE- CELL BIOLOGY, MOLECULAR BIOLOGY AND BIOTECHNOLOGY (BSCBO-301)**

## **SYLLABUS**

### **BLOCK-1-CELL BIOLOGY**

Unit-1-The Cell: Historical background, Cell theory, Cell size and Structure, Comparative account of prokaryotic and eukaryotic cell

Unit-2-Structures and Functions of Cell Organelles: Nucleus, Ribosomes, Nucleoplasm, Mitochondria and Chloroplast, Types of plastids, Golgi complex, Endoplasmic Reticulum, Lysosomes, Peroxisomes

Unit-3-Structure and Types of Chromosomes

Unit-4-Cell Division: Mitosis, Meiosis, their significance

### **BLOCK-2-MOLECULAR BIOLOGY**

Unit -5-Structure and Composition of DNA: DNA the genetic material, DNA structure, replication, DNA- protein interaction

Unit-6- Structure and Composition of RNA

Unit-7-Modern Concept of Gene and Genetic code: Operon concept

Unit-8- Protein synthesis and Gene regulation of Protein synthesis: Protein synthesis, Structure and properties of polysaccharides

### **BLOCK -3-BIOTECHNOLOGY**

Unit-9-Recombinant DNA

Unit-10-Genetic Engineering: Tools and techniques in Genetic Engineering

Unit-11- Biotechnology: Biotechnology and its applications in Health, Agriculture and Industries

Unit-12-Plant Tissue Culture: Methods of gene transfer, Transgenic plants, Gene bank, Nif gene, Nod gene and Mycoprotein