**Savitribai Phule Pune University**

*Satyaniketan’s*

**Adv. M.N.Deshmukh Arts, Science & Commerce College Rajur**

**F.Y.B.SC. BOTANY SEM – II - PAPER – II**

**BO-122: PRINCIPLES OF PLANT SCIENCE**

**(30 Lectures)**

**TEACHING PLAN**

(2023-24)

Submitted By

**Dr. Deepmala Tambe**

**Department of Botany**

**SEMESTER-II: PAPER-II**

**BO-122: PRINCIPLES OF PLANT SCIENCE (30 Lectures)**

**CREDIT-1: PLANT PHYSIOLOGY AND CELL BIOLOGY**

**15 Lectures (15 Hours) (2023-24)**

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| **Month** | **Unit** | **No. of Lecture** |
| **January** | **CREDIT-1: PLANT PHYSIOLOGY AND CELL BIOLOGY**  1. Introduction, definition and scope of plant physiology.  2. Diffusion – definition, importance of diffusion in plants, imbibition as a special type of diffusion.  3. Osmosis – definition, types of solutions (hypotonic, isotonic, hypertonic), endosmosis, exo-osmosis, osmotic pressure, turgor pressure, wall pressure, importance of osmosis in plants.  4. Plasmolysis – definition, mechanism and significance.  5. Plant growth - introduction, phases of growth, factors affecting growth, | **06** |
| **February** | 6. Structure of plant cell, differences between prokaryotic and eukaryotic cell.  7. Plant cell wall – components of primary cell wall, structure and functions.  8. Ultrastructure and functions of chloroplast  9. Cell cycle in plants- importance of cell cycle in plants, divisional stages of mitosis and meiosis. | **07** |
| **March** | **CREDIT-II: MOLECULAR BIOLOGY (15 Lectures)**  1. Introduction and scope of molecular biology, central dogma of molecular biology.  2. Structure of DNA, nucleoside and nucleotide  3. Watson Crick model of DNA and its characteristic features, types of DNA (A, B and Z DNA). | **07** |
| **April** | 4. Types of chromosomes.  5. Structure and types of RNA  6. DNA replication- Types of replication (conservative, semi-conservative and dispersive), enzymes involved, leading and lagging strands, Okazaki fragments. | **08** |

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