**DEPARTMENT OF BOTANY**

**Teaching Plan (Odd Semester) 2024-25**

**Dr. Divya Verma**

**B.Sc. (Prog.) Life Science 2nd Year, Sem III**

**DSC: Plant Cell and Developmental Biology (Practical) Group 3**

| **Topic** | **Allocation of Lectures** | **Month wise schedule** |
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| 1. Study of plant cell - through peel mount (Tradescantia, or any other); whole mount (Hydrilla) - cytoplasmic streaming.  2. Study of cell components - nucleus (Feulgen/acetocarmine staining); mitochondria (Janus green B staining); cell wall (PAS staining). | 2 Practical | August |
| 3. To study mitotic index. (pictures or permanent slides -24h-period or under different temperatures/environmental conditions may be used).  4. Study tissues and organs structure through temporary preparations of macerated material and sections - T.S. of dicot stem- Helianthus/ Cucurbita, Hydrilla/ Nympaea petiole, Casuarina, stem with secondary growth - Helianthus, Salvadora/ Bignonia; | 4 Practical | September |
| T.S. of monocot stem - Zea mays, Dracaena; T.S. of dicot root with and without secondary growth- Cicer, monocot root - Zea mays, V.S. of dicot leaf- Vernonia/Hameliaetc., Nerium, Hydrilla; V.S. of monocot leaf- Zea mays, Triticum/Dracaena/Crinum; peel mountstostudy epidermal structures - types of stomata, trichomes, laticifers; Shoot apex and root apex through micrographs. | 4 Practical | October |
| 5. Study Reproductive structures (i) Anther - T.S. of anther of any large flower like Datura/ Hamelia/ Kigelia); whole mounts of pollen grains;  (ii) pollen development through micrographs of T.S. anther at different stages of development (with secretory, amoeboid tapetum);  (iii) types of ovule through permanent slides/specimens/ micrographs;  (iv) Polygonum type of embryo sac development through micrographs; (v) ultrastructure of egg apparatus and central cell through micrographs | 4 Practical | November |
| 6. Study (i) pollen viability (TTC/FDA); (ii) pollen germination; (iii) growth of pollen tube in cleared pistil. | 2 Practical | December |