

PROGRAMME: MASTER OF SCIENCE BOTANY (MSCBOT-21)

Semester: Second

Course code: MSCBOT-510L

COURSE NAME: LABORATORY PRACTICAL-II

BLOCK-1-CELL BIOLOGY OF PLANTS

- Unit-1 Identification of different stages of mitosis and study of morphology of metaphase chromosomes using Onion root meristems
- Unit-2 Identification of different stages of meiosis from suitable plant material (Onion Buds)
- Unit-3 Study of mitotic index from suitable plant material
- Unit-4 Techniques of preparation of permanent and semi-permanent slides

BLOCK-2-CYTOGENETICS AND PLANT BREEDING

- Unit-5 Demonstration of SEM and TEM
- Unit-6 Problems based on Genetics
- Unit-7 Identification of Indian varieties of important crops

BLOCK-3-PLANT DEVELOPMENT

- Unit-8 Study of Cytohistological zones in the shoot apical meristem (SAM) in sectioned and double stained slides
- Unit-9 Examination in shoot apices in a monocot both in T.S. and L.S. to understand the origin of leaf primordia
- Unit-10 Study of alternate and distichous, alternate and superposed, opposite and superposed opposite and decussate leaf arrangements and examination of rosette plants and induction of bolting
- Unit-11 Microscopical examination of vertical section of leaves
- Unit-12 Study of epidermal peels of leaves to study the development and final structure of stomata and preparation of stomatal index and Demonstration of the effect of ABA on stomatal closure

BLOCK-4- PLANT REPRODUCTION

- Unit-13 Examination of modes of anther dehiscence and collection of pollen grains for microscopic examination
- Unit-14 Tests for pollen viability using stains and *in-vitro* germination, Pollen germination using hanging drop and sitting drop cultures
- Unit-15 Study of the primary and secondary abnormal growth in plants