**PROGRAMME: MASTER OF SCIENCE BOTANY (MSCBOT20)**
**Year/ Semester: II$^{nd}$ semester**
**Course Code: MBOT-510 (L)**
**Course Name: LABORATORY COURSE-II**

## Syllabus

## BIOLOGY AND DIVERSITY OF FUNGI (Lab Course)

### BLOCK-1: FUNGI-I

Unit-1: Isolation of Fungi from soil, water, litter and air
Unit-2: Identification of Fungal Cultures, slides and specimens-I
Unit-3: Identification of Fungal Cultures, slides and specimens-II
Unit-4: Identification of Fungal Cultures, slides and specimens-III
Unit-5: Mycorhizal colonization in roots of *Parthenium* and *Tagetes*

### BLOCK-2: FUNGI-II

Unit-6: Morphology of plant pathogens
Unit-7: Study of symptoms of fungal diseases
Unit-8: Morphology of Button, Oister, Paddy straw mushroom and amanita
Unit-9: Identification of ectomycorrhizal fungi
Unit-10: Identification of arbuscular-mycorrhizal fungi
Unit-11: Genetics of Fungi (*Neurospora ascus*)

## TAXONOMY OF ANGIOSPERMS (Lab Course)

### BLOCK – I: Taxonomy of Angiosperms

Unit- 1: Study of the locally available plants and recording of the intraspecific variation.
Unit- 2: Description and identification at Family, Genus and Species levels using flora-I
Unit- 3: Description and identification at Family, Genus and Species levels using flora-II
Unit- 4: Identification of key characters in a Group of Species of a Genus
Unit -5: Construction of Indented and Bracketed Keys for the Given Material
Unit- 6: Nomenclatural Problems
Unit- 7: Herbarium Techniques

## BIOLOGY AND DIVERSITY OF BRYOPHYTA AND PTERIDOPHYTA (Lab Course)

### BLOCK – I: BRYOPHYTA

Unit- 1: *Marchantia* and *Targionia*
Unit- 2: *Plagiochasma* and *Fimbriaria*
Unit- 3: *Pellia* and *Porella*
Unit- 4: *Anthoceros* and *Notothylas*
Unit- 5: *Funaria* and *Polytrichum*

## BLOCK – II: PTERIDOPHYTA

Unit- 6: *Lycopodium* and *Sleginella*
Unit- 7: *Psilotum* and *Isoetes*
Unit- 8: *Osmunda* and *Gleichenia*
Unit- 9: *Ophioglossum* and *Adiatum*
Unit- 10: *Marsilea*
Unit- 11: *Salvinia* and *Azolla*

## PLANT PHYSIOLOGY (Lab Course)

## BLOCK –I: Plant Physiology-I

Unit- 1: Determination of Water Potential using Gravimetric Method
Unit- 2: Effect of Temperature on Membrane Permeability
Unit- 3: Determination of Total and Titrable Acidity
Unit- 4: Determination of Stomatal Frequency and Index
Unit- 5: Stomatal Response to Promoters and Inhibitors
Unit- 6: Separation of chloroplast Pigments by Solvent Extraction Method

## BLOCK –I: Plant Physiology-II

Unit- 7: Determination of Absorption Spectra of Chlorophylls
Unit- 8: Estimation of Chlorophyll a, Chlorophyll b and Total Chlorophyll in Leaves of $C_3$ and $C_4$ Plants
Unit- 9: Determination of Rate of Respiration of Germinating Seeds by Continuous Current Method
Unit- 10: Estimation of Nitrogen by Micro- Kjeldahl's Method
Unit- 11: Estimation of Indole Acetic Acid (IAA)
Unit- 12: Determination of Seed Viability