

**MI-2: Plant Science II****Credits 04 (Full Marks: 75)****MI-2T: Plant Science II****Credits 03****[45L]****Course contents:**

| UNIT | Topic   | No. of Lectures |
|------|---|-----------------|
| 1    | <b>Plant morphology</b> - A general account of root, stem & leaves of monocot and dicot; phyllotaxy.  | 3               |
| 2    | <b>Flower</b> - different types of inflorescences, Aestivation, Placentation - types; Floral formula, Floral diagram.   | 4               |
| 3    | Fruits and Seeds-types  | 2               |
| 4    | <b>Structure and Development of Plant Body</b> : The three tissue systems, primary structure of root, stem, and leaf; types of stomata, Types of vascular bundles; Secondary growth in root and stem, Sapwood and heartwood; Ring and diffuse porous wood; Early and late wood; Annual ring; peridermand lenticels. | 5               |
| 5    | <b>Significance of Plant systematics</b> ; Functions of Herbarium; Important herbaria and botanical gardens of the world and India; Brief concept about Flora, Monographs; Keys:Single access and Multi-access.   | 4               |
| 6    | <b>Taxonomic hierarchy</b> , Concept of taxa (family, genus, species); Species concept (taxonomic, biological, evolutionary). Botanical nomenclature, Principles and rules (ICN); author citation, valid publication.   | 4               |
| 7    | <b>Systems of classification</b> , Overview of artificial, natural and phylogenetic classification; Classification system of Bentham and Hooker (up to series). Brief account of Angiosperm Phylogeny Group classification. Concept of primitive and Advance angiosperms (basal angiosperm and eudicots).           | 4               |
| 8    | <b>General descriptions of the given families</b> :<br>Malvaceae, Papilionaceae, Acanthaceae, Verbenaceae, Asteraceae, Poaceae.   | 4               |

**MI-2P: Plant Science II (Practical)****Credits 01****Course Outline:**

- Study of leaf types (Simple and Compounds).
- Study of inflorescence types(recemose and cymose)
- Study of floral diversity with special reference to adhesion and cohesion.
- Study of fruit types:  
Berry: *Cucumis sativus*, *Capsicum annum*, *Solanum melongena*  
Drupe: *Mangifera indica*, *Borassus flaballifer*  
Hesperidium: *Citrus*  
Nut: *Arachis hypogea*
- Study of vegetative and floral characters of the following families  
Malvaceae – *Sida* sp. / *Abutilon* sp.  
Acanthaceae – *Ruellia* sp./*Barleria* sp.  
Papilionaceae – *Tephrosia* sp./*Crotalaria* sp.  
Verbenaceae – *Lantana* sp./*Duranta* sp.