

DEPARTMENT OF BOTANY

Teaching Plan (A.Y. 2024–25)

F. Y. B. Sc. Botany [Semester - II]

Course Code - BOT-151-T Course Title: Plant Morphology

Sr. No	Month	Topics	Teacher
1.	December	<p>Credit-I</p> <p>1 Introduction to Plant Morphology</p> <p>1.1 Introduction, Definition; Types of morphology – Descriptive and Interpretative.</p> <p>1.2 Importance of Morphology.</p> <p>Root Morphology</p> <p>2.1 Definition, Parts of root; Types – Tap root and fibrous/adventitious</p> <p>2.2 Modifications of roots – Aerial roots (Hanging roots) with velamen tissue in Epiphytes; Haustorial (sucking) roots in Parasites - Cuscuta, Respiratory roots/Pneumatophores in Mangrove; Fleshy/Storage roots- Conical, Fusiform, Napiform, and Tuberous roots; Roots modified for Mechanical supports–Stilt, Prop, Climbing, and Clinging roots with examples. 2.3 Functions of roots.</p>	JRK
2.	January	<p>Stem Morphology 3.1 Definition, Parts of stem – nodes, internodes, buds, types of buds (Apical, Axillary, Accessory Adventitious and Floral).</p> <p>3.2 Types of stem – a) Erect–Strong, Weak (Creepers, Trailers and Climbers); b) Prostrate –Procumbent, Decumbent and Diffuse; Modifications of stem – a) Aerial – Phylloclade, Bulbil b) Sub-aerial – Runner, Sucker, Stolon, Offset; c) Underground –Rhizome, Corm, Tuber, Bulb (Tunicate and Scaly).</p> <p>3.3 Functions of stem.</p>	JRK
3.	February	<p>Leaf Morphology 4.1 Definition, Parts of leaf; Stipule, Petiole, Leaf margins, Apices and Base, Surface, Venation, Phyllotaxy, Leaf duration (Caducous, Deciduous, Persistent- Evergreen).</p> <p>4.2 Types of leaves – Simple and Compound – Pinnately (Unipinnate – Paripinnate and Imparipinnate; Bipinnate, Tripinnate and Decompound) and Palmately (Uni-, Bi-,</p>	JRK

		Tri-, Quadri- and Multifoliate); Leaf Modifications: Tendrils, Spines, Phyllode, Scaly, Reproductive, Trap leaves. 4.3 Functions of leaves. 5.2 Proteomics-concept, types, methods used in proteome analysis 5.3 Bioinformatics-concept, database and its classification, data retrieval tools.	
4.	March	Morphology of Inflorescence 5.1 Definition, Parts of Inflorescence. 5.2 Types of Inflorescence – a) Racemose – i) Main Axis Elongated – Raceme, Spike, Catkin, Spadix; ii) Main Axis Shortened – Umbel and Corymb; iii) Main Axis Flattened – Capitate, Head / Capitulum; b) Cymose – Solitary, axillary, Terminal, Uniparous (Monochasial) – Helicoid and Scorpid, Biparous (Dichasial), Multiparous (Polychasial) Cyme; c) Special Type – Verticilliaster, Cyathium, Hypanthodium. Credit-II Morphology of Flower 6.1 Definition, typical structure of flower. 6.2 Types of flowers based on Symmetry, Insertion of floral whorls on thalamus. 7.1 Floral whorls – I) Accessory whorls: • Calyx: sepals, number, cohesion, types of calyx; Modifications of calyx – Petaloid, Pappus, Spurred; • Corolla: petals, number, cohesion, forms of corolla–Polypetalous Regular–Cruciform, Caryophyllous, Rosaceous; Polypetalous irregular – Papilionaceous; Gamopetalous Regular – Tubular, Infundibuliform, Campanulate, Salvar shaped, Rotate;	JRK
5	April	• Gamopetalous Irregular – Bilabiate, Personate and Ligulate; Perianth: tepals, number, cohesion, modifications – sepaloid and petaloid tepals. Aestivation– Definition; aestivation in calyx, corolla and perianth; types of aestivation. 8.1 Floral whorls – II) Necessary / Essential whorls: • Androecium: Stamen, Structure of stamen; Cohesion and Adhesion; • Gynoecium: Carpel / Pistil; structure of carpel; Types of gynoecium based on carpel number and fusion; Placentation- Definition; types – Marginal, Parietal, Axile, Free- central, Basal, superficial. Morphology of Fruit and Seed 9.1 Fruit: Definition and parts of fruit. 9.2 Types of fruits 9.3 Seed: Definition, Parts of typical seed. 9.4 Morphology of Monocot and Dicot seeds.	JRK

Teacher In-charge

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