

Semester	II
Course * ¹	Major-1
Paper Title	Plant Diversity and Systematics
Paper Code	C1BT230212T / C1BT230212P
No. of Credits * ²	4 (Th =3 , Pr =1)
Theory / Practical / Composite	Composite
Minimum No. of preparatory hours per week a student has to devote	3
Number of Modules	1
Syllabus	<p>UNIT I: Plant Kingdom</p> <ol style="list-style-type: none"> 1. Evolutionary trends in algae with reference to chloroplast ultrastructure, pigments, reproduction. 2. Evolutionary position of Fungi. Salient features of major groups of fungi. 3. Bryophytes, Pteridophytes and Gymnosperms - Evolutionary trends and lifecycle patterns; 4. Biotechnological and Economic importance of algae, fungi, bryophyte, pteridophyte and gymnosperms <p>UNIT II: Morphology and Taxonomy of Angiosperms</p> <ol style="list-style-type: none"> 1. Important morphological peculiarities of root, phyllotaxy, inflorescences, flower characters and pollination syndromes, 2. Fundamentals of plant systematics and classification systems, Numerical taxonomy, Molecular taxonomy, chemotaxonomy and serotaxonomy, 3. Salient features of dicotyledons and monocotyledons (with examples). Use of image processing techniques for plant taxonomy. <p>UNIT III: Plant Cytogenetics</p> <ol style="list-style-type: none"> 1. Evolutionary significance of Karyotype studies, symmetrical and asymmetrical karyotype. 2. Spectral karyotyping and uses of other molecular cytogenetic markers. <p>Practical: (3 Classes per week)</p> <ol style="list-style-type: none"> 1. Identification of vegetative and reproductive structures of algae, fungi, bryophytes and pteridophytes from temporary and permanent mounts. 2. Estimating the Mitotic index using the “<i>Allium</i> test” 3. Study of Different Meiotic stages from permanent mounts.
Learning Outcomes * ³	1. Introduction to plant groups and their overall

	morphological and structural organization. 2. Acquiring knowledge about complexity of plant groups and their evolutionary relationship. 3. Gaining an overview of angiosperm morphology in plants. 4. Insights into the evolutionary implications of plant cytogenetics.	
Reading/Reference Lists * ⁴		
Evaluation	Theory CIA: 12 marks Semester Exam: 45 marks Attendance: 3 marks	Practical (if applicable) CA: 30 marks Continuous Assessment [Assessment modalities will be declared in due course by the Course Instructors] End Semester Viva: 8 marks Attendance: 2 marks
Paper Structure for Theory Semester Exam	Compulsory Objective Questions – 20 Marks [2 Marks each; Any 10 out of 12] 5 questions of 5 marks each – 25 Marks [Any 5 out of 6, With suitable subparts]	