

## TENTATIVE LESSON PLAN (EVEN SEMESTER)

SESSION: 2026-2027

Name of the teacher: Ms. Prerna

Department: Botany

Subject/Course: Plant Taxonomy and Ecology

Programme UG

Semester: 2<sup>nd</sup>

Unit	Name of Topic/Contents	Tentative Days/Dates
I.	<p>Botanical nomenclature and major rules of ICBN and ICN; Keys to identification of plants. General introduction and importance of herbaria and botanical gardens. Documentation of Floristic Diversity: Brief idea about floras, monographs, and journals. Brief idea of taxonomic evidences. Types of inflorescences, flower and parts of flower.</p>	February
II.	<p>Artificial, natural and Phylogenetic classifications, Bentham and Hooker system of classification (up to series), Angiosperm Phylogeny Group- General account.</p> <p>Diagnostic features and economic importance of the following families: Ranunculaceae, Brassicaceae, Malvaceae, Euphorbiaceae, Rutaceae, Leguminosae, Apocynaceae, Lamiaceae, Solanaceae, Asteraceae, Poaceae, and Orchidaceae</p> <p><b>Assignment 1<sup>st</sup></b></p>	February
III.	<p>Ecology: Definition, scope, and importance; levels of organization, environmental factors- climatic factors, edaphic factors, topographic and Biotic factors.</p> <p>Population Ecology: Basic concepts, characteristics, biotic potential, growth curve, ecotypes and ecads. Community Ecology: Concepts, characteristics (qualitative and quantitative- analytical and synthetic); methods of analysis; ecological succession.</p> <p><b>Assessment Test</b></p>	March
IV.	<p>Ecosystem: Structure and functions (trophic levels, food chains, food webs, ecological pyramids and energy flows). Phyto-geography: Phyto-geographical regions of India, vegetation types of India (forests)</p> <p>Global Change: Greenhouse effect and greenhouse gases; impacts of global warming, carbon trading.</p> <p>Biodiversity: levels, types, significance, threats, and conservation.</p>	April

*Prerna*  
24/2/26

## TENTATIVE LESSON PLAN (EVEN SEMESTER)

SESSION: 2026-2027

Name of the teacher: Ms. Prerna

Department: Botany

Subject/Course: Cytology and Genetics

Programme UG

Semester: ~~2<sup>nd</sup>~~ <sup>4<sup>th</sup></sup> LPH

Unit	Name of Topic/Contents	Tentative Days/Dates
I.	Cell as a unit of life; The Cell Theory; Prokaryotic and Eukaryotic cells; Eukaryotic cell components.  Structure and function of Cell Wall, Plasma Membrane, nucleus, Nuclear Envelope, structure of nuclear pore complex, Golgi apparatus, Ribosome, Endoplasmic Reticulum, Chloroplast, Mitochondria, Lysosomes, Peroxisomes and vacuoles.	February
II.	Cell Division: Mitosis and Meiosis. Chromosome: structural organization, ultra structure of Centromere and Telomere, Lampbrush and polytene chromosomes. DNA: structure, types and replication. RNA: structure and types. Genetic code. <b>Assignment 1<sup>st</sup></b>	February
III.	Mendel's Law of Inheritance  Lethal genes; Codominance, incomplete dominance; Gene Interaction (Inter- and Intra -allelic), Multiple Allelism; Pleiotropism. Chi Square test; Pedigree Analysis.  Cytoplasmic Inheritance: Kappa particles in <i>Paramecium</i> , leaf variegation in <i>Mirabilis jalapa</i> , Shell coiling. <b>Assessment Test</b>	March
IV.	Complete and Incomplete linkage, recombination frequency, crossing over.  Chromosomal aberrations- deletions, duplications, translocations, inversions, Variations in chromosome number-aneuploidy, polyploidy; sex chromosomes and sex determination.  Types of mutations, Effects of physical and chemical mutagens.	April

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## TENTATIVE LESSON PLAN (EVEN SEMESTER)

SESSION: 2026-2027

Name of the teacher: Ms. Prerna  
Subject/Course: Plant anatomy and Embryology

Department: Botany  
Programme UG

Semester: ~~2<sup>nd</sup>~~ 6<sup>th</sup>

Unit	Name of Topic/Contents	Tentative Days/Dates
I.	Introduction, objective and scope of plant anatomy, meristematic and permanent tissues, complex tissues, plant secretory tissues, mechanical tissues and their distribution.  Tissue systems (epidermal, ground and vascular), cambium, types of vascular bundles, vascular skeleton at nodes and internodes.	February
II.	SAM anatomy, theories of histological organization of shoot apex, anatomy of monocot and dicot stem, secondary growth, anomalous secondary growth ( <i>Dracaena</i> , <i>Boerhaavia</i> , and <i>Mirabilis</i> ).  Phyllotaxy, anatomy of dicot and monocot leaf, Kranz anatomy.  RAM anatomy, types of roots in monocots and dicots, quiescent centre, root-stem transition, secondary growth in dicot root, structural modifications in respiratory ( <i>Rhizophora</i> ), storage ( <i>Beta</i> ) and epiphytic ( <i>Vanda</i> ) roots.  <b>Assignment 1<sup>st</sup></b>	March
III.	History and scope of plant embryology, flower – a modified shoot, floral organs.  Microsporangium, its wall and dehiscence mechanism, microsporogenesis, pollen grains and its structure (pollen wall), scope of palynology.  Pollen-pistil interaction, self-incompatibility.  Pollination types and agencies, pollen germination and development.  <b>Assessment Test</b>	March
IV.	Structure of mega sporangium. Megasporogenesis and megagametogenesis, types of female gametophyte,  Double fertilization, endosperm types, embryogenesis in dicots and monocots; polyembryony, apomixes.  Structure of dicot and monocot seed, dispersal mechanisms in fruits and seeds.	April

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