



E.M.GOPALAKRISHNA KONE YADAVA WOMEN'S COLLEGE

An Autonomous Institution -Affiliated to Madurai Kamaraj University

Re-accredited (3rd Cycle) with Grade A⁺ and CGPA 3.51 by NAAC

ALLIED BOTANY

LESSON PLAN

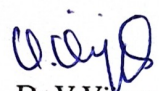
2024-2025

ODD SEMESTER

Sub. Code : 23OUZOGEB03

Title of the Paper: Plant Biology - I

Total Hours : 60

Month	Unit	Syllabus Description	Hours Allocated	Teaching Mode & Methods	Course Teacher
June	I	Cell Biology & Genetics: Prokaryotic and Eukaryotic cell- structure /organisation. Cell organelles - ultrastructure and function of chloroplast, mitochondria and nucleus. Cell division - mitosis and meiosis. Mendelism - Law of dominance, Law of segregation, Incomplete dominance. Law of independent assortment. Monohybrid and dihybrid cross - Test cross - Back cross.	14	Chalk and Talk, PPT, group discussions, presentations, quizzes, and Virtual Classes.	 Dr. V. Vijaya
July	II	Algae: General characters of algae – Salient features of major groups – Cyanophyceae, Chlorophyceae, Phaeophyceae, and Rhodophyceae - structure, reproduction and life cycle of the following genera – Anabaena, Sargassum and economic importance of algae.	14	Chalk and Talk, PPT, group discussions, presentations, quizzes, and Virtual Class.	
August	III	Virus, Bacteria and Fungi: Virus - general characters, structure of TMV, structure of bacteriophage. Bacteria - general characters, structure, and reproduction of Escherichia coli and	10	Chalk and Talk, PPT, group discussions, presentations, quizzes, and Virtual Class.	

		economic importance of bacteria. General characters of fungi, structure, reproduction, and life cycle of the following genera - Penicillium and Agaricus and economic importance of fungi.			
September	IV	Bryophytes, Pteridophytes, and Gymnosperms: General characters of Bryophytes, Structure and life cycle of Funaria. General characters of Pteridophytes, Structure and life cycle of Lycopodium. General characters of Gymnosperms, Structure and life cycle of Cycas.	10	Chalk and Talk, PPT, group discussions, presentations, quizzes, and Virtual Class.	
October	V	Plant Biotechnology: Principles of tissue culture, Basic requirements, Totipotency, Explant, Surface Sterilization, Inoculation, regeneration, incubation, Callus, Micropropagation, Invitro culture methods, genetic modification in plants(Bt Cotton plants), and the role of tissue culture in crop improvement and conservation.	12	Chalk and Talk, PPT, group discussions, presentations, quizzes, and Virtual Class.	


Head of the Department


Principal
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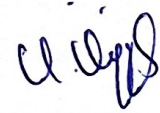
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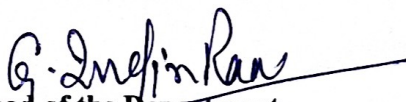
ALLIED BOTANY LESSON PLAN 2024-2025 ODD SEMESTER

Sub. Code : 23OUZOGEB03P

Title of the Paper: Lab for Plant Biology - I

Total Hours : 30

Month	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher
June	Cell Biology: i. Study of prokaryotic and eukaryotic plant cells. ii. Study of plant organelles - Mitochondria, Chloroplasts and Nucleus. iii. Study of Mitosis and Meiosis using onion root tip.	4	Observation, Interpretation and Discussion	 Dr.V.Vijaya
	Genetics: Monohybrid, Back Cross, Test Cross and Incomplete dominance.	4	Observation and Interpretation.	
July	Virus - Phage: Identification of TMV and bacteriophage.	2	Observation and Interpretation.	
	Bacteria: Study the structure of Escherichia coli.	2	Observation and Interpretation.	
	Algae Study: i. Microscopic analysis of Anabaena. ii. Study the morphology of Sargassum.	2	Mounting of samples and Interpretation.	
August	Fungi: i. Microscopic observation of Penicillium. ii. Morphological observation of Agaricus.	3	Observation and Interpretation.	
	Bryophyte: i. Study the morphology of Funaria	2	Sectioning, mounting, and Interpretation	
September	Pteridophyte: Study the morphology of Lycopodium.	2	Observation and Interpretation	
	Gymnosperm: i. Study the vegetative and reproductive structure of Cycas.	2	Demonstration and Interpretation	
	Plant Biotechnology: i. Demonstration of in vitro plant tissue culture protocol.	4	Demonstration and Interpretation.	
October	Model Practical Exam	3		


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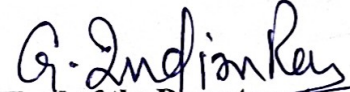
ALLIED BOTANY LESSON PLAN 2024-2025 EVEN SEMESTER

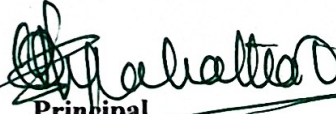
Sub. Code : 23OUZOGEB04

Title of the Paper: Plant Biology - II

Total Hours : 60

Month	Unit	Syllabus Description	Hours Allocated	Teaching Mode & Methods	Course Teacher
December	I	Morphology of Flowering Plants: Plant and its parts. Structure and function of root and stem. Leaf and its parts. Leaf types- simple and compound. Phyllotaxy and types. Inflorescence - Racemose, Cymose and Special types. Terminology concerning flower description.	12	Chalk and Talk, PPT, group discussions, presentation, quizzes, field visit, etc.	Dr.V.Vijaya
January	II	Taxonomy: Study of the range of characters and plants of economic importance in the following families: Rutaceae, Caesalpiniaceae, Asclepiadaceae, Euphorbiaceae and Cannaceae.	12	Chalk and Talk, PPT, group discussions, presentation, quizzes, field visit, etc.	
February	III	Anatomy: Tissue and tissue systems: Simple and complex tissues. Anatomy of monocot and dicot roots - anatomy of monocot and dicot stems - anatomy of dicot and monocot leaves	12	Chalk and Talk, PPT, group discussions, presentations, quizzes, etc.	
March	IV	Embryology: Structure of mature anther and ovule - Types of ovules, structure of embryosac, pollination-double fertilisation, structure of dicotyledonous and monocotyledonous seeds.	14	Chalk and Talk, PPT, group discussions, presentations, quizzes, etc.	
March	V	Plant Physiology: Absorption of water, photosynthesis - light reaction - Calvin cycle; respiration - Glycolysis - Krebs cycle - electron transport system. Growth hormones - auxins and cytokinin and their applications.	10	Chalk and Talk, PPT, group discussions, presentation, quizzes, etc.	


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ALLIED BOTANY LESSON PLAN 2024-2025 EVEN SEMESTER

Sub. Code : 23OUZOGEB04P

Title of the Paper: Lab for Plant Biology - II

Total Hours : 30

Month	Unit	Syllabus Description	Hours Allocated	Teaching Mode & Methods	Course Teacher
December	I	Morphology of Flowering Plants: i. Plant morphology – Herb, Shrub, Tree, Creeper ii. Leaf types & Phyllotaxy iii. Flower morphology iv. Inflorescence Types – Raceme, Cymose, Special Types v. Root System	6	Field observations, technical descriptions, Sectioning and mounting of plant samples, and discussion.	 Dr.V.Vijaya
January	II	Taxonomy: Detailed study of the following families: (Dissect a flower, construct a floral diagram and write the floral formula) i. Rutaceae – Citrus lemon / Murraya koenigii ii. Caesalpinaceae – Cassia fistula/Delonix regia iii. Asclepiadaceae – Calotropis gigantea / Calotropis procera iv. Euphorbeceae – Ricinus communis / Acalypha indica v. Cannaceae – Canna indica	6	Observations, technical descriptions, Sectioning and mounting of plant samples, and discussion.	
	III	Anatomy: To make suitable micro preparations of the anatomy materials prescribed in the syllabus. i. Anatomy of Monocot Root – <i>Zea mays</i> , <i>Oryza sativa</i> ii. Dicot Root – <i>Hibiscus rosa-sinensis</i> , <i>Solanum melongena</i> iii. Monocot Stem – <i>Zea mays</i> , <i>Oryza sativa</i> iv. Dicot Stem – <i>Mangifera indica</i> , <i>Rosa</i> spp.	8	Observations, technical descriptions, Sectioning and mounting of plant samples, and discussion.	

