

Practical Plan

Name of the college: Government College of Arts, Science & Commerce, Sanquelim-Goa				
Name of Faculty: DR Jyosna Gawas		Subject: Botany		
Paper code: BOT-100		Program: B.Sc.		Batch: II
Academic year: 2025-2026		Semester: I		Total Practicals/Labs: 15
Credits: 01				
Course Objectives: 1. To introduce students to the structural and functional diversity of plant organs, tissues, and physiological processes through hands-on experiments and demonstrations. 2. To develop competence in using basic botanical instruments and experimental techniques for studying plant morphology, anatomy, physiology, and responses to environmental stimuli.				
Expected Course Outcome: 1. Apply fundamental botanical concepts to identify and describe different plant organs, tissues, and physiological processes through laboratory experiments. 2. Demonstrate proficiency in handling basic botanical instruments and perform experiments related to photosynthesis, respiration, water relations, and plant movements.				
Student Learning Outcome: 1. Identify and differentiate various types of roots, stems, leaves, inflorescences, fruits, seeds, and tissues with reference to morphology and anatomy. 2. Conduct simple physiological experiments (e.g., photosynthesis, osmosis, transpiration) and interpret results to understand plant responses and functions.				
Month	Practicals/Labs Scheduled Date	No. of Practicals/Labs planned	List of Experiments	Reference books
July	12/07/2025	2	Study of different types of fossils To study different types of root	
	19/07/2025	1	To study different types of stem	
	26/07/2025	2	To study different characters of leaves with respect to: a. phyllotaxy – Alternate, spiral, opposite, whorled; b. leaf venation - parallel and reticulate	

August	02/08/2025	1	To study different characters of leaves with respect to: a. leaf types - compound, simple b. shapes of leaves c. leaf margins, d. leaf apex
	09/08/2025	2	To study different characters of leaves with respect to vernation To study various parts of the flower, types of inflorescences and fruits.
	16/08/2025	1	To study type of seeds and germination in seeds
	23/08/2025	1	To study types of tissues as mentioned in theory with the help of permanent slides.
September October	06/09/2025	2	Demonstration of respiration in germinating seeds by phenol red method Demonstration of tropic responses in plants - phototropism, geotropism, chemotropism, hydrotropism and thigmotropism.
	13/09/2025	2	To demonstrate that oxygen is evolved during photosynthesis using inverted funnel method To demonstrate leaf movements as mentioned in theory.
	20/09/2025	1	Field visit
	27/09/2025	2	Demonstration of process of Osmosis and Imbibition in plants.
	04/10/2025	1	Demonstration of process of Diffusion and Transpiration in plants.
	11/10/2025	1	Study of basic instruments used in botanical studies: a. Dissection microscope, light microscope, distillation unit, spectrophotometer, Autoclave b. Laminar air flow unit, centrifuge, orbital shaker, micrometres (stage and ocular), pH meter.
	18/10/2025		Practical Exam

Assessment Rubrics

Component	Max Marks
ISA 1	NA
ISA 2	NA
ISA 3	NA
Practical	25
Project	NA
Semester End Exam	NA