Practical Plan

Name of the college: Government College of Arts, Science and Commerce, Sanquelim-Goa

Name of Faculty: Dr Jyosna Gawas	**Subject: Botany**	
Paper code: BOT 305	**Program: T. Y. B.Sc.**	**Division: Batch I**
Academic year: 2025 - 2026	**Semester: VI**	**Total Practicals/Labs: 15**

Credits: 01

Course Objectives:

1. To familiarize students with field and laboratory techniques used in vegetation analysis, ecological sampling, biomass estimation, and the study of plant adaptations across different habitats.
2. To develop skills in spatial analysis and environmental interpretation through the use of maps, GPS, and remotely sensed satellite imagery for vegetation and land-use studies.

Expected Course Outcome: The student will be able to

- Apply ecological and quantitative methods such as quadrat sampling, species–area curves, and biomass estimation to analyze herbaceous and aquatic plant communities.
- Interpret vegetation patterns and ecological interactions using field observations, thematic maps, GPS data, and satellite imagery.

Student Learning Outcome: Student will be able to

- Identify, record, and analyze plant diversity and adaptations (hydrophytes, xerophytes, epiphytes) and biotic interactions using standard botanical and ecological procedures.
- Demonstrate practical competence in geospatial tools by preparing vegetation maps, locating field sites using GPS, and interpreting false color composite satellite images.

Month	Practicals/Labs Scheduled Date	No. of Practicals/Labs planned	List of Experiments	Reference books
December 2025	2/12/2025	1	Determination of minimal quadrat size for the study of herbaceous vegetation in the college campus by species area curve method (plant species to be listed).	Practicals in Ecology by

	9/12/2025	1	Quantitative analysis of herbaceous vegetation for frequency, density and abundance.	Pratima Kapur & Sudha Rani Govil
	16/12/2025	1	Tarang 2025	
	23/12/2025	1	Estimation of biomass of aerial parts of herbaceous plants (fresh weight and dry weight).	
January 2026	2/1/2026	1	Study of phytoplankton and hydrophyte diversity from an aquatic ecosystem.	
	6/1/2026	1	Study of morphological and anatomical adaptations of hydrophytes (one each).	
	13/1/2026	1	Study of morphological and anatomical adaptations of xerophytes (one each).	
	20/1/2026	1	Study of morphological and anatomical adaptations of epiphytes (one each).	
	27/1/2026	1	Study of biotic interactions: Stem parasite (*Loranthus* and *Cuscuta*); epiphyte (orchid); predation (insectivorous plants – *Utricularia*/*Drosera*/pitcher plant).	
February 2026	3/2/2026	1	Preparation of map of India with respect to: (i) major climatic zones, (ii) phytogeographic regions.	
	10/2/2026	1	Preparation of map of India with respect to: (i) forest types.	
	17/2/2026	1	Preparation of map of Goa to show vegetation types as specified in theory.	
	24/2/2026	1	Visual interpretation of remotely sensed image for vegetation types.	
March 2026	3/3/2026	1	Holi Holiday	
	10/3/2026	1	Use of a hand-held GPS instrument to locate coordinates of a demarcated field site (example - college campus).	
	17/3/2026		Identification and description of false color images of land use patterns from a satellite image (city, reservoir, forest, agricultural land and sea-shore).	
	24/3/2026	1	Journal Completion	
	31/3/2026	1	Certification	

*** Assessment Rubrics**

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