Practical Plan

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

Name of Faculty: Ms. Rutika Rajesh Vasta | **Subject:** Botany

Paper code: BOT-205 | **Program:** B.Sc. | **Batch: I**

Academic year: 2025-2026 | **Semester: 2** | **Total Practicals/Labs:** 15

Credits: 01

Course Objectives:

1. Introduce students to the field of palynology and its different branches.
2. Give in-depth understanding of pollen grain morphology and the applied aspect of palynology.
3. Help in developing skill in the field of palynology

Expected Course Outcome:

1. To gain a basic understanding of pollen morphology, pollen development, and pollen wall structure.
2. To recognize major branches and applications of palynology.
3. help students develop practical skills in pollen identification, pollen viability testing, pollen storage techniques.

Student Learning Outcome:

1. Explains the morphology of pollen based on polarity, symmetry, shape, size and aperture.
2. Describe sporoderm stratification, exine ornamentation and methods of pollen viability.
3. Apply the acquired skills in identification of types of honey.

Month	Practicals/Labs Scheduled Date		No. of Practicals/Labs planned	List of Experiments	Reference books
	From	To			
December 2025	01/12/2025	06/12/2025	2	Study of ultrastructure of pollen wall using electron micrograph.	Bhattacharya, K and Majumdar, MR (2021). A Text book of Palynology.
	08/12/2025	13/12/2025	2	Study of pollen units by temporary mount method: monads (Malvaceae), dyads, polyads (Mimosoideae), tetrad (Portulacaceae), pollinia (Asclepiadaceae), massulae (Orchidaceae).	
	15/12/2025	20/12/2025	0	Goa Liberation Day	

	22/12/2025	27/12/2025	0	Christmas Vacation	New Central Book Agency (P) Ltd., Kolkata, India. Erdtman, G (1969). Handbook of Palynology: Morphology, Taxonomy, Ecology – An Introduction to the Study of Pollen Grains and Spores. Hafner Pub. Co., New York.
December 2025-January2026	29/12/2025	03/01/2025	2	Study of pollen units by temporary mount method: monads (Malvaceae), dyads, polyads (Mimosoideae), tetrad (Portulacaceae), pollinia (Asclepiadaceae), massulae (Orchidaceae).	
January2026	05/01/2026	10/01/2025	2	Study of shape and size of pollen in *Ipomoea sp.*, *Ocimum sp.*, *Hibiscus sp.*, *Acacia auriculiformis* and *Pancratium sp.*	
	12/01/2026	17/01/2026	2	Study of shape and size of pollen in Ipomoea sp., *Ocimum sp.*, *Hibiscus sp.*, *Acacia auriculiformis* and *Pancratium sp.*	
	19/01/2026	24/01/2026	2	Study of ornamentation patterns and aperture types using fresh pollens by acetolysis method (one plant each from Amaranthaceae, Convolvulaceae, Acanthaceae, Asteraceae and Poaceae).	
	26/01/2026	31/01/2026	2	Study of ornamentation patterns and aperture types using fresh pollens by acetolysis method (one plant each from Amaranthaceae, Convolvulaceae, Acanthaceae, Asteraceae and Poaceae).	
February2026	02/02/2026	07/02/2026	2	Testing of pollen viability using Tetrazolium salt/ Acetocarmine /I2KI reagent (flowers of any 2 families	
	09/02/2026	14/02/2026	2	Calculation of percentage of pollen germination using pollen germination medium (flowers of any 4 families).	
	16/02/2026	21/02/2026	2	Study of pollen germination by hanging drop and sitting drop techniques in Impatiens sp. and *Catharanthus roseus*	
	23/02/2026	28/02/2026	2	Study of aerospora (intramural and extramural) at different altitudes..	
March 2026	02/03/2026	07/03/2026	2	Taxonomic interpretation of pollen of related species (2 or 3 species belonging to the same genus).	
	09/03/2026	14/03/2026	2	Analysis of honey samples to identify their unipalynous/ multipalynous nature by Chitaley's method	
	16/03/2026	21/03/2026	2	Revision	
	23/03/2026	28/03/2026	2	Practical Exam	

Assessment Rubrics

Component	Max Marks
ISA 1	NA
ISA 2	NA
ISA 3	NA
Practical	25

Project	NA
Semester End Exam	25