Practical Plan

Name of the college: Government College of Arts, Science and Commerce, Sanquelim- Goa		
Name of Faculty: Ms. Shubha Shivdas Kauthankar	**Subject:** Botany	
Paper code: BOT 304- Plant Tissue Culture	**Program: T.Y.B.Sc.**	**Division: -**
Academic year: 2025- 2026	**Semester: VI**	**Total Practicals/Labs: 15x2= 30 hours**
Credits: 1 (2 Hours)		

Course Objectives: 1) To study the concepts and basic Plant Tissue Culture techniques for regeneration of plants from cells and tissue

2) To acquire knowledge about applications of plant tissue culture in various fields.

Course Outcome: 1) Acquire knowledge about the concepts in plant tissue culture, sterilization techniques, Preparation of media (MS) and techniques used in plant regeneration.

2) Understand the applications of plant tissue culture in conservation.

Student Learning Outcome:

1) Understand the principles of Plant Tissue Culture.

2) Familiarize students with plant tissue culture laboratory setup including preparation of culture media.

3) Acquire knowledge about various in-vitro culture techniques for plant regeneration.

4) Understand various applications of plant tissue culture including in-situ and ex-situ conservation.

Month	Practicals/Labs Scheduled Date	No. of Practicals/Labs planned	List of Experiments	Reference books
December 2025	01/12/2025	1 (2 hours)	Familiarization with working and handling of laboratory instruments and equipment; washing, packing and sterilization of glassware	Bhojwani, S.S. and Razdan, M.K. 1996. Plant Tissue Culture: Theory and Practice Razdan, M.K. 2003. An Introduction to Plant Tissue Culture De, K.K. 1992. Plant Tissue Culture Kumar, U. 2011. Methods in Plant Tissue Culture
December 2025	08/12/2025	1 (2 hours)	Preparation of plant tissue culture medium (MS) and its sterilization.	
December 2025	15/12/2025	1 (2 hours)	Preparation of plant tissue culture medium (MS) and its sterilization.	
December 2025	22/12/2025	1 (2 hours)	Encapsulation of somatic/true embryos to prepare synthetic seeds.	
January 2026	05/01/2026	1 (2 hours)	Familiarization with working and handling of laboratory instruments and equipment; washing, packing and sterilization of glassware	
January 2026	12/01/2026	1 (2 hours)	Surface sterilization and in vitro seed germination of Brasasica sps. / suitable seeds. (Part I)	
January 2026	19/01/2026	1 (2 hours)	Induction of callus from Daucus carota cambium & hypocotyl segments as explants. (Part I)	
February 2026	02/02/2026	1 (2 hours)	Morphological and microscopic study of callus.	
February 2026	09/02/2026	1 (2 hours)	Surface sterilization and in vitro seed germination of Brasasica sps. / suitable seeds. (Part II)	

February 2026	16/02/2026	1 (2 hours)	Enzymatic isolation of plant protoplasts.	
February 2026	23/02/2026	1 (2 hours)	Embryo culture of Zea mays. (Part I)	
March 2026	02/02/2026	1 (2 hours)	Induction of callus from Daucus carota cambium & hypocotyl segments as explants. (Part II)	
March 2026	09/03/2026	1 (2 hours)	Embryo culture of Zea mays. (Part II)	
March 2026	16/03/2026	1 (2 hours)	Enzymatic isolation of plant protoplasts.	
March 2026	23/03/2026	1 (2 hours)	Revision	
March 2026	30/03/2026	1 (2 hours)	Journal certification	

***Assessment Rubrics**

Component	Max Marks
ISA 1	7.5
ISA 2	7.5
ISA 3	7.5
Practical	25
Project	-
Semester End Exam	60