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: BOD101- Plant Tissue Culture	**Program: T.Y.B.Sc.**	**Division: -**
Academic year: 2024- 2025	**Semester: V**	**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
July 2024	11/07/2024	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
July 2024	16/07/2024	1 (2 hours)	Preparation of plant tissue culture medium (MS) and its sterilization.	
July 2024	23/07/2024	1 (2 hours)	Surface sterilization and in vitro seed germination of Brasasica sps. / suitable seeds. (Part I)	
July 2024	30/07/2024	1 (2 hours)	Induction of callus from Daucus carota cambium & hypocotyl segments as explants. (Part I)	
August 2024	06/08/2024	1 (2 hours)	Encapsulation of somatic/true embryos to prepare synthetic seeds.	
August 2024	13/08/2024	1 (2 hours)	Morphological and microscopic study of callus.	
August 2024	20/08/2024	1 (2 hours)	Surface sterilization and in vitro seed germination of Brasasica sps. / suitable seeds. (Part II)	
August 2024	27/08/2024	1 (2 hours)	Enzymatic isolation of plant protoplasts.	
September 2024	03/09/2024	1 (2 hours)	Embryo culture of Zea mays. (Part I)	
September 2024	17/09/2024	1 (2 hours)	Induction of callus from Daucus carota cambium & hypocotyl segments as explants. (Part II)	
September 2024	24/09/2024	1 (2 hours)	Regeneration of shoot and root from callus (Part I)	

October 2024	01/10/2024	1 (2 hours)	Embryo culture of Zea mays. (Part II)	
October 2024	08/10/2024	1 (2 hours)	Enzymatic isolation of plant protoplasts.	
October 2024	15/10/2024	1 (2 hours)	Regeneration of shoot and root from callus (Part II)	
October 2024	22/10/2024	1 (2 hours)	Revision/ Journal certification	

***Assessment Rubrics**

Component	Max Marks
ISA 1	7
ISA 2	8
Practical	25
Project	-
Semester End Exam	60