



1 **DEPARTMENT OF HORTICULTURE**
2 **FACULTY OF AGRICULTURAL SCIENCES**
3 **University of the Punjab, Lahore**
4

Programme	B.Sc. (Hons.) Agriculture	Course Code	HORT-409	Credit Hours	3(2-1)
Course Title	Propagation and Nursery Management				
Course Introduction					
This course is designed to provide a comprehensive understanding of propagation and nursery management. Propagation and nursery management are critical components in horticulture, ensuring the successful growth and development of healthy, high-quality plants. Propagation techniques, such as seed sowing, cuttings, grafting, and tissue culture, are fundamental for producing new plants efficiently and maintaining genetic diversity. Effective nursery management encompasses the meticulous care of young plants, including appropriate watering, fertilization, pest control, and environmental conditioning, to ensure they reach a robust and marketable state.					
Learning Outcomes					
Upon completing the course, students will:					
<ol style="list-style-type: none">1. Acquire technical knowledge in nursery management and certification procedures.2. Students will learn about the day-to-day operations of a nursery, including watering, fertilizing, pruning, and pest management.3. Students will learn about the different methods of plant propagation, including seeds, cuttings, layering, and grafting.					
Course Content				Assignments/Readings	
Week 1	Unit-I				
	1.1 Introduction to Nursery Management				
	1.2 Types of horticultural nurseries				
Week 2	Unit-II				
	2.1 Management practices				
	2.2 Introduction, Types Sources				
Week 3	Unit-III				
	3.1 Water, nutrient, weeds, diseases, insect-pests				
	3.3 Protection against temperature extremities				
	3.4 Radiation				
Week 4	Unit-IV				
	4.1 Important nursery operations				
Week 5	Unit-V				

	5.1 Propagation methods	
Week 6	Unit-VI	
	6.1 Rootstocks for horticultural plants	
	6.2 Raising of stock seedlings	
Week 7	Unit-VII	
	7.1 Pre-sowing treatments of seeds	
	7.2 Apomixis	
Week 8	Unit-VIII	
	8.1 Polyembryony	
	8.2 Stionic interactions	
Week 9	Unit-IX	
	9.1 Graft compatibility	
Week 10	Unit-X	
	10.1 Incompatibility	
	10.2 Use of growth regulators for propagation	
Week 11	Unit-XI	
	11.1 Certification systems	
	11.2 Standards	
	11.3 Rules & regulation	
	11.4 Procedures	
Week 12	Unit-XII	
	12.1 Certification of planting material	
Week 13	Unit-XIII	
	13.1 Nursery plants	
Week 14	Unit-XIV	
	14.1 Marketing of nursery plants	
Week 15	Unit-XV	
	15.1 Site Selection	
Week 16	Unit-XVI	
	16.1 Sustainable Environment	

PRACTICAL

Week 1	Introduction to Nursery	
Week 2	Nursery Techniques	
Week 3	Raising of rootstocks	
Week 4	Identification of rootstocks for different fruit plants	
Week 5	Selection and preparation of bud wood	
Week 6	Practices in seed collection	
Week 7	Seed treatment	
Week 8	Propagation methods	
Week 9	Plant growing structures	
Week 10	Media preparation	
Week 11	Soil mixtures	
Week 12	Media sterilization	
Week 13	Management of progeny plants	
Week 14	Virus indexing	
Week 15	Visit to germplasm units	
Week 16	Visits to nursery areas	

Textbooks and Reading Material

1. Adriance, G.W., and F.R. Brison. 2000. Propagation of Horticultural Plants. Biotech Books, Delhi, India.
2. Bose, T.K., S.K. Mitra and M.K. Sadhu. 1986. Propagation of Tropical and Subtropical Horticultural Crops. Naya Prokash, Calcutta-Six, India.
3. Hartmann, H.T., D.E. Kester, E.T. Davies and R.L. Geneve. 2009. Plant Propagation: Principles and Practices (7th Ed.). Prentice-Hall India Learning Pvt. Ltd., New Delhi, India.
4. Sharma, R.R. 2002. Propagation of Horticultural Crops: Principles and Practices. Kalyani Publishers, Ludhiana, New Delhi, India.
5. Sharma, R.R. and M. Srivastav. 2004. Plant Propagation and Nursery management. International Book Distributing Co. (Publishing Division), Lucknow, India.

Teaching Learning Strategies

1. Lectures
2. Discussions
3. Presentations
4. Quiz
5. Assignments

Assignments: Types and Number with Calendar

1. Research and propose sustainable practices that can be implemented in a nursery to reduce environmental impact. Include a cost-benefit analysis of adopting these practices.
2. Develop a comprehensive plan for propagating and managing a nursery for a selected plant species.

Assessment

6

Sr. No.	Elements	Weightage	Details
1.	Midterm Assessment	35%	Written Assessment at the mid-point of the semester.
2.	Formative Assessment	25%	Continuous assessment includes: Classroom participation, assignments, presentations, viva voce, attitude and behavior, hands-on-activities, short tests, projects, practical, reflections, readings, quizzes etc.
3.	Final Assessment	40%	Written Examination at the end of the semester. It is mostly in the form of a test, but owing to the nature of the course the teacher may assess their students based on term paper, research proposal development, field work and report writing etc.

7

8