



DEPARTMENT OF HORTICULTURE
FACULTY OF AGRICULTURAL SCIENCES
University of the Punjab, Lahore

Programme	B.Sc. (Hons.) Agriculture	Course Code	HORT-308	Credit Hours	3(2-1)
Course Title	Post-Harvest Horticulture				
Course Introduction					
This course explores the critical phase of horticultural production that occurs after crops are harvested. Students will learn about the physiological, biochemical, and technological aspects of post-harvest handling, storage, and marketing of horticultural products, including fruits, vegetables, flowers, and ornamentals.					
Learning Outcomes					
Upon completing the course, students will:					
1. Understand the physiological and biochemical changes that occur in horticultural products after harvest 2. - Learn about post-harvest handling and storage techniques to maintain quality and extend shelf life 3. - Develop skills in packaging, transportation, and marketing of horticultural products 4. - Analyze the economic and environmental implications of post-harvest practices 5. - Apply knowledge to real-world scenarios in post-harvest horticulture					
Course Content			Assignments/Readings		
Week 1	Unit-I 1.1 Introduction to Postharvest Horticulture				
Week 2	Unit-II 2.1 Pre- and post-harvest factors affecting quality,				
	2.2 Climacteric and non-climacteric commodities				
Week 3	Unit-III 3.1 Climacteric and non-climacteric commodities				
	3.3 Indices of crop maturity / ripening				
Week 4	Unit-IV 4.1 harvesting and pre-cooling				
Week 5	Unit-V				

	5.1 Curing and artificial ripening of horticultural commodities	
Week 6	Unit-VI 6.1 Packing house operations	
Week 7	Unit-VII 7.1 Culling	
Week 8	Unit-VIII 8.1 Grading Washing and Cleaning	
Week 9	Unit-IX 9.1 Waxing and Packaging of important Horticultural Commodities	
Week 10	Unit-X 10.1 Storage; principles and types	
	10.2 Ripening	
Week 11	Unit-XI 11.1 Harvesting 11.2 Quality assurance	
Week 12	Unit-XII 12.1 Marketing of major tropical and sub-tropical fruits of Pakistan	
Week 13	Unit-XIII 13.1 International standards and quality assurance	
Week 14	Unit-XIV 14.1 Shipment for local and foreign markets.	
Week 15	Unit-XV 15.1 Innovation in Postharvest Horticulture	
Week 16	Unit-XVI 16.1 Global Distribution and Trade	
PRACTICAL		
Week 1	Practices in harvesting	
Week 2	Machinery and equipment used for various operations	

Week 3	Cost of production	
Week 4	Demonstration of harvest indices	
Week 5	Practices in harvesting	
Week 6	curing, packing and preparation of different fruits	
Week 7	curing, packing and preparation of different vegetables	
Week 8	curing, packing and preparation of different flowers	
Week 9	Sensory Evaluation of Horticultural Products: Students conduct sensory evaluations of various horticultural products to assess flavor, texture, and aroma.	
Week 10	Post-Harvest Physiology Experiments: Students conduct experiments to investigate the physiological changes that occur in horticultural products after harvest.	
Week 11	Ethylene Management: Students investigate the role of ethylene in fruit ripening and senescence, and practice ethylene management techniques.	
Week 12	Transportation Simulation: Students simulate the transportation of horticultural products and evaluate the effects on product quality.	
Week 13	Packaging Materials and Methods: Students design and test different packaging materials and methods for horticultural products.	
Week 14	Fruit and Vegetable Quality Assessment: Students evaluate the quality of various fruits and vegetables based on appearance, texture, and flavor.	
Week 15	Market Analysis and Value Addition	
Week 16	Post-Harvest Handling Techniques: Students learn and practice proper handling techniques for fruits and vegetables, including bruise prevention and packaging methods.	

Textbooks and Reading Material

1. Kader, A.A. 2002. Postharvest Technology of Horticultural Crops. University of California Press, California, USA.

2. Kays, S.J. 1998. Postharvest Physiology of Perishable Plant Products. CBS Publishers & Distributors, New Delhi, India.
3. Mitra, S.K. 1997. Post-Harvest Physiology and Storage of Tropical and Sub-tropical Fruits. CAB International Publishing, Wallingford, U.K.
4. Shewfelt, R.L. and S.E. Prussia (Eds.). 1993. Postharvest Handling: A Systems Approach. Academic Press, California, USA.
5. Thompson, A.K. 1996. Post-Harvest Technology of Fruits and Vegetables. Blackwell Science Ltd., Oxford.
6. Pandry, P.H. 2002. Principles and Practices of Postharvest Technology. Kalyani Publishers, New Delhi, India.
7. Wills, R.B.H., W.B. McGlasson, D. Graham, D.C. Joyce. 2007. Postharvest (5th Ed.). Printer Everbest China.

Teaching Learning Strategies

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

Assignments: Types and Number with Calendar

1. Post-Harvest Handling and Storage of a Selected Horticultural Product
2. Case Study: Reducing Postharvest Losses in Tomato Supply Chain

Assessment

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.