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**DEPARTMENT OF HORTICULTURE**  
**FACULTY OF AGRICULTURAL SCIENCES**



**University of the Punjab, Lahore**

Programme	B.Sc. (Hons.) Agriculture	Course Code	HORT-304	Credit Hours	3(2-1)
Course Title	<b>TROPICAL AND SUB-TROPICAL FRUITS</b>				
Course Introduction					
Tropical and sub-tropical fruits are of immense importance due to their nutritional, economic, and cultural significance. Rich in vitamins, minerals, antioxidants, and dietary fibers, these fruits contribute significantly to human health and nutrition, helping to prevent various diseases and promote overall well-being. Economically, tropical and sub-tropical fruits such as mangoes, bananas, pineapples, and avocados are vital cash crops for many developing countries, providing income and employment to millions of small-scale farmers and contributing to national economies through both local markets and international trade.					
Learning Outcomes					
Upon completing the course, students will:					
1. Gain familiarity with the production technology of key tropical and subtropical fruits grown in Pakistan.					
Course Content			Assignments/Readings		
<b>Week 1</b>	<b>Unit-I</b> 1.1 Classification of tropical and sub-tropical fruits				
<b>Week 2</b>	<b>Unit-II</b> 2.1 Cultivation with reference to acreage				
	2.2 production				
<b>Week 3</b>	<b>Unit-III</b> 3.1 Botany				
	3.3 Cultivars				
<b>Week 4</b>	<b>Unit-IV</b> 4.1 Rootstocks				
<b>Week 5</b>	<b>Unit-V</b> 5.1 Propagation				
<b>Week 6</b>	<b>Unit-VI</b>				

	6.1 Climate	
<b>Week 7</b>	<b>Unit-VII</b> 7.1 Soil	
<b>Week 8</b>	<b>Unit-VIII</b> 8.1 Cultural practices	
<b>Week 9</b>	<b>Unit-IX</b> 9.1 water, nutrition, weeds, diseases, disorders and pest management	
<b>Week 10</b>	<b>Unit-X</b> 10.1 Maturity	
	10.2 Ripening	
<b>Week 11</b>	<b>Unit-XI</b> 11.1 Harvesting 11.2 Quality assurance	
<b>Week 12</b>	<b>Unit-XII</b> 12.1 Marketing of major tropical and sub-tropical fruits of Pakistan	
<b>Week 13</b>	<b>Unit-XIII</b> 13.1 Climate and Soil Requirements	
<b>Week 14</b>	<b>Unit-XIV</b> 14.1 Plant Physiology	
<b>Week 15</b>	<b>Unit-XV</b> 15.1 Cultural and Ethnobotanical Aspects	
<b>Week 16</b>	<b>Unit-XVI</b> 16.1 Global Distribution and Trade	
<b>PRACTICAL</b>		
<b>Week 1</b>	Practices in fruit health management	
<b>Week 2</b>	Pollination in commercial fruits	
<b>Week 3</b>	Cost of production	
<b>Week 4</b>	identification of commercial cultivars of important tropical and sub-tropical fruits	
<b>Week 5</b>	Description of commercial cultivars of important tropical and sub-tropical fruits	

<b>Week 6</b>	Nursery Management	
<b>Week 7</b>	Grafting and Budding	
<b>Week 8</b>	Soil Preparation and Testing	
<b>Week 9</b>	Planting Techniques	
<b>Week 10</b>	Pruning and Training	
<b>Week 11</b>	Pest and Disease Identification and Control	
<b>Week 12</b>	propagation by Tissue Culture	
<b>Week 13</b>	Agroforestry Systems	
<b>Week 14</b>	Organic Cultivation Practices	
<b>Week 15</b>	Market Analysis and Value Addition	
<b>Week 16</b>	Visit to research institutes and commercial orchards	

### Textbooks and Reading Material

- Alebrigo, L.G., L.W.Timmer and M.E. Rogers. 2014. Vol:II. Citrus (Crop Production Science in Horticulture). CABI
- Bali, S.S. 2003. Fruit Growing, Kalyani Publishers, New Delhi.
- Bose, T.K. and S.K. Mitra (Eds.). 1990. Fruits: Tropical and Subtropical. Naya Prokash, Calcutta-Six.
- Durate, O. and R.E. Paull, 2012. Tropical Fruits: Vol.II. Crop Production Science in Horticulture 24. CAB International Publishing.
- Chotopadhyay, T.K. (Ed.). 2006. A Textbook on Pomology, Vol: II. Tropical Fruits. Kalyani Publishers, Ludhiana, New Delhi, India.
- Yadav, P.K. 2007. Fruit Production Technology. 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

Conduct a case study on a successful tropical fruit plantation in Pakistan. Examine the production techniques used, the challenges faced, and the strategies implemented to achieve success.

### Assessment

<b>Sr. No.</b>	<b>Elements</b>	<b>Weightage</b>	<b>Details</b>
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.

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