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Programme	B.Sc. (Hons.) Agriculture	Course Code	HORT-301	Credit Hours	3(2-1)
Course Title	**PRINCIPLES OF FRUIT PRODUCTION**				

Course Introduction

This course provides a comprehensive overview of the principles and practices of fruit production, from orchard establishment to post-harvest handling. Students will learn about the biological and environmental factors that influence fruit production, as well as the cultural practices and technologies used to optimize fruit quality and yield.

Learning Outcomes

Upon completion of the course, students will:

1. Gain awareness of the principles and physiology of fruit production.
2. Understand the principles of fruit production, including climate and soil requirements, varietal selection, and breeding.
3. Analyze the importance of proper planting, training, and pruning techniques for optimal fruit production.
4. Explain the role of irrigation, fertilization, and pest management in fruit production.
5. Identify and describe the major fruit production systems, including organic and conventional methods.

	Course Content	Assignments/Readings
Week 1	**Unit-I** 1.1 Introduction to fruit science 1.2 Importance of fruits	
	1.3 Source-sink relationship 1.4 Classification of fruits	
Week 2	**Unit-II** 2.1 Water relations	
	2.2 Fruit-bud formation	
Week 3	**Unit-III** 3.1 Initiation 3.2 History,	
	3.3 Developments. 3.4 Controlling factors	
Week 4	**Unit-IV** 4.1 Types of pollination 4.2 Fruit setting problems	
Week 5	**Unit-V** 5.1 Fruitfulness	

	5.2 Unfruitfulness	
Week 6	**Unit-VI** 6.1 Rest	
	6.2 Dormancy	
Week 7	**Unit-VII** 7.1 Biennial bearing	
	7.2 Causes and control	
Week 8	**Unit-VIII** 8.1 Fruit thinning	
	8.2 Parthenocarpy	
Week 9	**Unit-IX** 9.1 Seedless fruit formation	
	9.2 Harvesting methods	
Week 10	**Unit-X** 10.1 Plant Growth Regulators (PGRs),	
	10.2 Bud variations	
Week 11	**Unit-XI** 11.1 Mutations	
	11.2 Pre-harvest handling of fruits	
Week 12	**Unit-XII** 12.1 Maturity indices	
	12.2 Preparation for fresh market.	
Week 13	**Unit-XIII** 13.1 Propagation Techniques	
	13.2 Pruning and Training	
Week 14	**Unit-XIV** 14.1 Fertilization	
	14.2 Economic Aspects	
Week 15	**Unit-XV** 15.1 Profitability	

Week 16	**Unit-XVI** 16.1 Sustainability	
	16.2 Resource conservation in fruit production.	
PRACTICAL		
Week 1	Identification of various developmental stages of buds	
Week 2	Fruit bearing habits	
Week 3	Training and pruning	
Week 4	Evergreen and deciduous fruit trees	
Week 5	Thinning of fruits	
Week 6	Harvesting methods	
Week 7	Practices to control irregular bearing	
Week 8	Preparation of PGR stock solutions	
Week 9	Applications of PGR	
Week 10	Different methods to break seed dormancy	
Week 11	Determination of soil pH	
Week 12	Visits to fruit orchards.	
Week 13	Planting Techniques	
Week 14	Pollination Management	
Week 15	Post-Harvest Handling	
Week 16	Sustainable Practices	

Textbooks and Reading Material

1. Chottopadhay, T.K. (Ed.). 2003. A Textbook on Pomology, Vol. I: Fundamentals of Fruit Growing. Kalyani Publishers, Ludhiana, New Delhi, India.
2. Chottopadhay, T.K. 2000. A Textbook on Pomology, Vol. II: Tropical Fruits. Kalyani Publishers, New Delhi.
3. Yadav, P.K. 2007. Fruit Production Technology. International Book Distributing Co. (Publishing Division), Lucknow, India.
4. Dugger, B.M.2009. Plant physiology with Special Reference to Plant Production. Biblio Bazaar, LLC.
5. Jackson, D.I., N.E. Looney (Eds.). 1999. Temperate and Subtropical Fruit Production (2nd Ed.). CAB International Publishing, Wallinford, U.K.

Teaching Learning Strategies

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

Assignments: Types and Number with Calendar

1. Explore the potential and ethical considerations of using genetic modification to enhance fruit quality, yield, and resistance to pests and diseases
2. Fruit production plan

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.