

22BEAS202 PRINCIPLES OF HORTICULTURAL CROPS AND PLANT PROTECTION

Hours Per Week :

L	T	P	C
1	1	0	1

PREREQUISITE KNOWLEDGE: Basics of vegetables and floriculture crops, post-harvest practices..

COURSE DESCRIPTION AND OBJECTIVES:

The goal of this course is to develop layout of planting methods through knowledge of climate, crops varieties and different sowing methods. This course also helps to nurture post-harvest plant growing structures through adequate knowledge of post-harvest practices.

MODULE-1

UNIT-1

4L+0T+8P=12 Hours

SCOPE OF HORTICULTURE:

Soil and climatic requirements for fruits, vegetables and floriculture crops, improved varieties.

UNIT-2

4L+0T+8P=12 Hours

PLANTING METHODS:

Criteria for site selection, layout and planting methods, nursery raising, commercial varieties/hybrids, sowing and planting times and methods, seed rate and seed treatment for vegetable crops.

PRACTICES:

- Judging maturity time for harvesting of crop.
- Study of seed viability and germination test.
- Identification and description of important fruits.
- Study of flowers and vegetable crops.
- Study of different garden tools.
- Preparation of nursery bed.
- Cultural operations for vegetable crops i.e. sowing.
- Seed extraction techniques.

MODULE-2

UNIT-1

4L+0T+8P=12 Hours

PROPAGATION METHODS:

Macro and micro propagation methods, plant growing structures, pruning and training, fertilizer application, harvesting, grading and packaging, post-harvest practices.

UNIT-2

4L+0T+8P=12 Hours

ORCHARD MANAGEMENT:

Crop coefficients, water requirements and critical stages, fertigation, irrigation methods. Garden tools, management of orchard, Extraction and storage of vegetables seeds. Major pests and diseases and their management in horticulture crops.



Source: <http://www.freshtec.co.uk/template/2.jpg>

SKILLS:

- ✓ Developing plan to grow seedlings in Nursery Bed.
- ✓ Able to manage operations in orchard.
- ✓ Able to plan and execute different cultural practices during specific season.

PRACTICES:

- Practices of pruning in some important fruit crops.
- Practices of training in some important fruit crops.
- Cultural operations for vegetable crops i.e. fertilizer application.
- Cultural operations for vegetable crops i.e. mulching.
- Cultural operations for vegetable crops i.e. irrigation methods.
- Cultural operations for vegetable crops i.e. weed control.
- Identification of important pests and diseases and their control.
- Visit to commercial greenhouse/ polyhouse.

COURSE OUTCOMES:

Upon successful completion of this course, students will have the ability to:

CO No.	Course Outcomes	Blooms Level	Module No.	Mapping with POs
1	Able to prepare seed bed for different type of horticultural crops based on their climatic requirements	Apply	1	1, 2, 3, 4, 5, 7, 9, 10, 11
2	Able to organize different cultural operations in nursery and orchards	Analyze	1	1, 5, 12
3	Able to develop layout for orchards and nurseries	Create	1	1, 2, 3, 4, 5, 7, 9, 10, 11
4	Able to develop sustainable varieties through macro or micro propagation methods	Create	2	1, 2, 3, 4, 5, 7, 9, 10, 11
5	Able to develop new tools for different cultural activities in orchards	Create	2	1, 2, 3, 4, 5, 7, 9, 10, 11
6	Able to recommend suitable irrigation, planting and harvesting methods for different horticultural crops	Evaluate	2	1, 2, 3, 4, 5, 7, 9, 10, 11

TEXT BOOKS:

1. Saraswathy, S., T.L. Preethi, S. Balasubramanyan, J. Suresh, N. Revathy and S. Natarajan. 2007.
2. "Postharvest management of Horticultural Crops", Agrobios Publishers, Jodhpur 2012.

REFERENCE BOOKS:

1. Bansal. P.C. 2008. "Horticulture in India. CBS Publishers and Distributors", New Delhi.
2. Arjunan, G., Karthikeyan, G, Dinakaran, D. and Raguchander, T. 2005, "Diseases of Horticultural Crops" AE Publications, Coimbatore.
3. Sharma Neeta and Mashkoo Alam. 1997. Postharvest diseases of Horticultural crops. International Book publishing Co. UP.