

**UNIT I****Basic principles of Horticulture and propagation techniques**

Horticultural zones of India - classification - Soil and climatic factors - methods of propagation - sexual and vegetative propagation - cutting, layering, grafting and budding – Micro propagation techniques - Principles, planning and layout of orchards.

**UNIT II****Production methods and cropping systems**

Study of planting systems - Bearing habits of fruit crops- Principles and methods of training and pruning - Cropping systems, inter cropping, multi tier cropping - Irrigation and fertigation systems - After cultural practices for annual and perennial horticultural crops.

**UNIT III****Cultural hints for fruits crops**

Cultural hints for mango, banana, guava, and citrus crops

**UNIT IV****Protected Cultivation for vegetables and flowers**

Basic concepts -Protected cultivation techniques for tomato, capsicum, coriander - rose, gerbera, carnation - Potential of Protected cultivation

**UNIT V****Floral art, landscape gardening and turf management**

Flower arrangements, floral products, bonsai making - Dry flower techniques Principles and elements of landscape gardening - Turfing and turf management.

**Practical**

1. Identification of different horticultural crops
2. Sexual and Asexual methods of propagation
3. Practices in planning and layout of an orchard and different systems of planting
4. Preparation of potting mixture and field application techniques of fertilizer
5. Preparation and application of growth regulators
6. Practices in training and pruning
7. Hybrid seed production for vegetable crops
8. Special horticultural management practices in protected cultivated crops
9. Harvesting handling and packaging techniques
10. Practices in micro propagation (tissue culture) techniques
11. Study of garden components and lawn making
12. Visit to commercial tissue culture laboratory
13. Visit to green house and poly house units
14. Visit to commercial orchards / plantations
15. Visit to fruit, flower and vegetable markets.

**Reference Books**

1. Propagation of Horticulture Crops – Principles and Practices by R. R. Sharma
2. Hi-tech Horticulture by D. K. Singh Agrotech publishing Academy, Udaipur
3. Introduction to Horticulture – by Kumar N. (1990)
4. Advances in Horticulture (Vol 1 to 12) – by Singh Ranjit (1997)
5. Landscape Gardening and Designing with Plants – by Bhartacharjee S. K. (2004)
6. Floriculture in India – by Randhawa G. S. and Mukhopadhyay A.
7. Plant propagation- Principles and Practices by Hartmann and Kester