
Open course 2 Code: BO5OPT02
HORTICULTURE AND NURSERY MANAGEMENT
(Theory 72 hrs; Credits 3)

Objectives:

- Understand the importance of horticulture in human welfare.
- Understand the propagation and cultural practices of useful vegetable, fruit and garden plants.
- Understand the impact of modern technologies in biology on horticultural plants.
- Understand the basic concepts of landscaping and garden designing.
- Inculcate interest in landscaping, gardening and flower and fruit culture.

HORTICULTURE (48 hrs)

Module 1: Introduction (10 hrs)

Introduction to horticulture: definition, history; classification of horticultural plants, disciplines of horticulture. Soil: formation, composition, types, texture, pH and conductivity. Garden tools and implements.

Preparation of nursery bed; manures and fertilizers - farm yard manure, compost, vermicompost, biofertilizers; chemical fertilizers - NPK; time and application of manures and fertilizers, foliar spray. Irrigation methods - surface, sub, drip and spray irrigations - advantages and disadvantages - periodicity of irrigation.

Module 2: Propagation of plants (10 hrs)

Propagation of horticultural plants - by seeds; seed development and viability, seed dormancy, seed health, seed testing and certification. Growing seedlings in indoor containers and field nurseries, seed bed preparation, seedling transplanting; advantages and disadvantages of seed propagation.

Vegetative propagation - organs used in propagation - natural and artificial vegetative propagation; methods - cutting, layering, grafting and budding; advantages and disadvantages of vegetative propagation; micropropagation.

Module 3: Gardening (10 hrs)

Gardening - ornamental gardens, indoor gardens, kitchen gardens- terrestrial and aquatic gardens - garden adornments; garden designing; garden components - lawns, shrubs and trees, borders, hedges, edges, drives, walks, topiary, trophy, rockery; famous gardens of India. Landscape architecture - home landscape design, urban planning, parks, landscaping and public buildings, industrial and

highway landscaping. Physical control of plant growth - training and pruning - selection of plant, bonsai containers and method of bonsai formation.

Module 4: Floriculture (6 hrs)

Introduction, commercial floriculture - jasmine, orchid, anthurium, rose, gladiolus; production of cut flowers, quality maintenance, packing, marketing. Flower arrangements - basic styles - upright and slanting - japanese ikebana, dry flower arrangement.

Module 5: Olericulture (4 hrs)

Olericulture - types of vegetable growing - home gardens and market gardens; cultivation practices of leafy vegetable (Amarathus), tuber (Potato), fruit (Tomato), flower (Cauliflower).

Module 6: Pomology (4 hrs)

Pomology - cultivation of fruit crops - mango, banana and pine apple - preparation of land, spacing, planting, irrigation, hormones, harvest and storage. Factors affecting duration of storage. Principles of preservation - temporary and permanent - agents for fruit preservation. Preparation of pickles, jams, jellies and squashes using locally available fruits.

Module 7: Gardening – additional features (4 hrs)

Garden friends - honey bees, ladybirds, frogs, spiders, earthworms, centipedes and millipedes. Garden foes - pests, pathogenic fungi, bacteria, virus. Control measures - pesticides and fungicides; neem tobacco decoction. Hazards of chemical pesticides; equipments used in controlling horticultural pests - sprayers, dusting equipments - sterilization, fumigation.

Weeds - annual, perennial; weed control - prevention, eradication - hand weeding, tillage, burning, mowing, biological control, use of herbicides - selective and non selective - mechanisms involved in herbicidal actions.

NURSERY MANAGEMENT (6 hrs)**Module 1: Nurseries (6 hrs)**

Nursery: definition, types; management strategies - planning, layout, budgeting - production unit, sales unit. Plant growing structures - green houses, fernery, orchidarium, arboretum.

ON HAND TRAINING (18 hrs)

1. Preparation of potting mixture of known combination and potting in earthen pots/poly bags.
2. Preparation of nursery beds.
3. Preparation of compost/vermicompost using different substrates.
4. Working knowledge and identification of garden tools and implements.
5. Practical knowledge in different plant propagation techniques listed in syllabus.
6. Cultivation of a vegetable/ornamental plant/fruit crop listed in the syllabus.
7. Practice of different pruning operations (top dressing, shaping and topiary) in the following plants: (1) Bougainvillea (2) Phyllanthus.
8. Visit a well established nursery and submit report.

REFERENCES

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