

Horticulture(HORT)

First Year

Theory - 40
Practical - 60

Unit-I Fruit Cultivation

- Horticulture – Meaning and definition
- Division of Horticulture
- Fruit cultivation in India with special reference to Odisha
- Cultivation aspects – Major fruit crops
 - Mango
 - Banana
 - Citrus fruits
 - Guava
 - Sapota
 - Litchi
 - Papaya
 - Pine apple
 - Amla
 - Jack fruit

Unit-II

- Climate

Unit-III

- Soil
- Varieties of major fruits
- Land preparation
- Propagation and transplantation
- Intercultural
- Nutrient management

Unit IV

- Integrated pest and disease control and management
- Irrigation
- Harvest and post-harvest management
- Assimilating marketing information

Practical:

- Identification of fruit trees
- Different method of grafting and budding, raising of root, stock for grafting and budding of fruit plants
- Method of planting of fruit plants
- Lay out of different irrigation system of fruit plants
- Calculation of fertilizer requirement and study of manuring and fertilizer application in fruits plant
- Method of application of growth regulators and calculation for different concentrations

- Training and pruning in fruit plants
- Study of fruit setting and fruit drop in mango, guava and citrus fruits
- Selection of site, planning, soil and soil management and lay out of orchards
- Study of different Interculture operations in fruit plants

HOV - Regular **Second Year**

Theory - 40
Practical - 60

Unit-I Plantation crops, spices, medicinal and aromatic crops

- Importance of plantation crops, spices, medicinal and aromatic crops grown in India as well as in Odisha
- Scope of plantation crops, classification of spices, medicinal and aromatic plants

Unit-II

- Details of cultivation aspects
 - Plantation crops
 - Coconut
 - Cashewnut
 - Arecanut
 - Spices
 - Blackpeper
 - Coriander
 - Cinnamon
 - Cardamom
 - Medicinal
 - Aloe vera
 - Brahmi
 - Aswagandha
 - Aromatic
 - Lemongrass
 - Pamarosa

With special reference to

- Origin
- Climate
- Soil
- Varieties
- Land preparation
- Propagation and transplantation
- After care
- Interculture
- Nutrient management
- Irrigation
- Moisture conservation
- Integrated pest and disease management
- Intercropping
- Harvest and post-harvest care
- Storage and processing
- Value addition and byproduct utilization

Unit.III Vegetable Production & Preservation of Vegetable & Fruits

- Introduction, role of vegetables in human nutrition, importance of vegetable cultivation.

- Present status and future prospects of vegetable cultivation in India as well as in Odisha
 - Classification of vegetable gardens
 - Off season vegetable cultivation
- Detail of vegetable cultivation of different vegetable such as-
 - Potato
 - Brinjal
 - Tamato
 - Chilli
 - Okara
 - Raddish
 - Onion
 - Garlic
 - Turmeric
 - Ginger
 - Sweet potato
 - Yam
 - Elephant foot yam
 - Cabbage
 - Curly flower
 - Broccoli
 - Cowpea
 - Beans
 - Pea
 - Pumpkin
 - Cucumber
 - Different gourds
 - Watermelons and
 - Greens
- With special reference of
 - Food value
 - Climate
 - Soil
 - Varieties
 - Nursery raising
 - Sowing
 - Planting
 - Manuring
 - Interculture
 - Irrigation
 - Drainage
 - Integrated pest & diseases management
 - Physiological disorders
 - Harvesting and post-harvesting care
 - Assimilating market information
 - Maintain health and safety measures at workplace

Unit-IV.Preservation

- Importance of preservation

- Maturity standards of fruits and vegetables
- Handling, grading, packaging and transportation of fruits and vegetables
- Use of growth regulators and emulsion for extending the storage life
- Principles and methods of preservation by low temperature, chemical additives, salt, sugar, heat and drying etc.
- Preparation and preservation of
 - Fruit juice
 - Syrups
 - Squashes
 - Cordials
 - Jams
 - Jelly
 - Marmalade
 - Chatney
 - Ketchup
 - Pickles & sources

Practical:

- Study of different preparation structures, equipments, farm complements and horticultural tools
- Media and soil mixture for raising seedlings and cuttings
- Testing the seed germination, viability and vitality of seeds
- Seed treatment methods, preparation of seed beds, sowing of seeds in shallow pots
- Study of vegetative propagation of plants by modified plant structure such as bulbs, corms, rhizomes, tubers, suckers and runner
- Propagation of plants by cutting with and without use of growth regulators
- Methods of plant propagation by air layering
- Potting of seedlings in pots, polythen bags and other containers and planting in nursery beds.
- Selection of scion and pre-conditioning and collection of scion for grafting
- Estimation of cost of production of grafts
- Planning for developing nursery
- Planting and management of mother plants
- Site selection for nursery
- Raising of nursery plants
- Management of grafts in nursery and after care
- Water management in nursery
- Protection of plants from heat by using shadings
- Plant protection measure in nursery
- Identification of plantation crops, spices, medicinal and aromatic plants
- Studying different problems of plantation crops in orchards
- Identification of vegetables seeds, chemicals, preservations etc.
- Preparation & management of nursery beds (soil sollarisation)

- Raising of seedlings in polyhouse for off-season and early vegetable cultivation
- Method of application of manure and fertilisers and calculation of fertilizers
- Study of types of manures and fertilizer
- Use of growth regulators in vegetable crops
- Study of deficiency symptoms, disorders in vegetable crops
- Calculation of cost of cultivation of important vegetable crops
- Preparation of preserved products such fruit juices, syrups, squash, jam, jelly, chutney, pickles and sauce
- Study zero energy storage, low cost storage structure of onion, potato, ginger, turmeric etc.