Proposed Course and Credit Hours in B.Sc. (Hons.) Ag.

DEPARTMENT OF HORTICULTURE

Semester	Course Title	Code	Credit Hours
Ist	Fundamentals of Horticulture (NEW)	AG-104	3(2+1)
IInd	Production Technology for Fruit and Plantation Crops	AG-207	2(1+1)
IIIrd			
IVth	Production Technology for Vegetable and Spices	AG-407	2(1+1)
Vth	Production Technology for Ornamental Crops, MAPs and Landscaping	AG-507	2(1+1)
VIth	Post-harvest Management and Value Addition of Fruits and Vegetables	AG-606	2(1+1)
	Total		**11**

3. Production Technology for Vegetable and Spices **2 (1+1)**

Theory

Importance of vegetables & spices in human nutrition and national economy, vegetable gardening. Brief about origin, area, climate, soil, improved varieties and cultivation practices such as time of sowing, transplanting techniques, planting distance, fertilizer requirements, irrigation, weed management, harvesting and yield, physiological disorders of important vegetables and spices (Tomato, Brinjal, Chilli, Capsicum, Cucumber, Melons, Gourds, Pumpkin); Cole crops such as Cabbage, Cauliflower; Bulb crops such as Onion, Garlic; Root crops such as Carrot, Radish; Okra; Leafy vegetables such as Amaranth, Palak; Spices such as Black pepper, Fenugreek, Fennel & Cumin.

HORTICULTURE

1. Fundamentals of Horticulture (NEW) **2(1+1) AG-104**

Theory

Horticulture-Its definition and branches, importance and scope; horticultural and botanical classification; climate and soil for horticultural crops; Plant propagation-methods and propagating structures; principles of orchard establishment; Principles and methods of training and pruning, juvenility and flower bud differentiation; unfruitfulness; pollination, pollinizers and pollinators; fertilization and parthenocarpy; use of plant bioregulators in horticulture, irrigation and fertilizers applications-method and quality.

Practical

Identification of garden tools. Identification of horticultural crops. Preparation of seed bed/nursery bed. Practice of sexual and asexual methods of propagation Layout and planting or orchard plants. Training and pruning of fruit trees transplanting and care of vegetable seedlings making of herbaceous and shrubbery borders. Preparation of potting mixture potting and repotting. Fertilizer application in different crops. Visits to commercial nurseries/orchard.

2. Production Technology for Fruit and Plantation Crops **2(1+1) AG-507**

Theory

Importance and scope of fruit and plantation crop industry in India; High density planting; Use of rootstocks; Production technologies for the cultivation of major fruits-mango, banana, citrcus, grape, guava, Litchi, papaya, apple, pear, peach and; minor fruits-pineapple, pomegranate, jackfruit, strawberry. nut crops; plantation crops-coconut, arecanut, cashew, tea, coffee & rubber.

Practical

Seed propagation. Scarification and stratification of seeds. Propagation methods for fruit and plantation crops. Including micro-propagation. Description and identification of fruit. Preparation of plant bia regulators and their uses, pests, diseases and physiological disorders of above fruit and plantation crops, Visit to commercial orchards.

3. Production Technology for Vegetable and Spices **2(1+1) AG-207**

Theory

Importance of vegetables & spices in human nutrition and national economy, types of vegetable gardening brief about origin, area, production improved varieties and cultivation practices such as time of sowing, transplanting techniques, planting distance, fertilizer

requirements, irrigation, weed management, harvesting storage, physiological disorders, disease and seed production of important vegetable (potato, tomato, cauliflower, onion, okra, bottle guard and bitter guard) and spices i.e. condiments. Ginger. turmeric, coriander, cumin, funnel, black peper, ilaichi.

Practical

Identification of vegetables & spice crops and their seeds. Nursery raising. Direct seed sowing and transplanting. Study of morphological characters of different vegetables & spices. Fertilizers applications raising of nursery of vegetable & spices, vegetable and spices seed extraction. Harvesting & preparation for market. Economics of vegetables and spices cultivation.

4. Production Technology for Ornamental Crops, MAPS and Landscaping 2(1+1) AG-407

Theory

Importance and scope of ornamental crops. medicinal and aromatic plants and landscaping. Principles of landscaping. Landscape uses of trees, shrubs and climbers. Style of gardening and lawn making and maintenance. Production technology of important cut flowers like rose, Gerbera, carnation, lilium and orchids under protected conditions and gladiolus, tuberose, chrysanthemum under open conditions. Package of practices for loose flowers like marigold and jasmine under open conditions. Production technology of important medicinal plants like- Isabgol, Ashwagandha, Asparagus, Aloe and aromatic plants like mint, lemongrass, citronella, palmarosa, ocimum, geranium, vetiver. Processing and value edition in ornamental crop and MAPs produce.

Practical

Identification of Ornamental plants. Identification of Medicinal and Aromatic Plants. Nursery bed preparation and seed sowing. Training and pruning of Ornamental plants. Planning and layout of garden. Bed preparation and planting of MAP. Protected structures - care and maintenance. Intercultural operations in flowers and MAP. Harvesting and post harvest handling of cut and loose flowers extraction of essentials oils.

5. Post-harvest Management and Value Addition of Fruits and Vegetables 2(1+1) AG-606

Theory

Importance of post harvest technology of fruits, vegetables and ornamental crops. Extent and possible causes of post harvest losses; Pre- harvest factors affecting postharvest quality, maturity and self life of fruits, vegetables and ornamental crops. Ripening and changes occurring during ripening; Respiration and factors affecting respiration rate; role of ethylene;

post harvest disease and disorders; heat, chilling and freezing injury; harvesting and field handling; Storage (ZECC, cold storage, CA. MA, and hypobaric); Value addition concept; Principles and methods of preservation; Intermediate moisture food- Jam, jelly, marmalade, preserve. candy - Concepts and Standards; Fermented and non-fermented beverages. Tomato products- Concepts and Standards; Drying/ Dehydration of fruits and vegetables - Concept and methods, osmotic drying. Canning - Concepts and Standards, packaging of products.

Practical

Applications of different types of packaging, containers for shelf life extension. Effect of temperature on shelf life and quality of produce. Demonstration of chilling and freezing injury in vegetables and fruits. Extraction and preservation of pulps and juices. Preparation of jam, jelly, RTS, nectar, squash, osmotically dried products, fruit bar and candy and tomato products, canned products. Quality evaluation of products– physico-chemical and sensory. Visit to processing unit/ industry.