

A. Bsc(Hort.)

	Floriculture & Landscape Architecture	
1. HORT.-153	Ornamental Horticulture	2(1+1)
2. HORT.-203	Commercial Floriculture	3(2+1)
3. HORT.-204	Principles of Landscape Architecture	2(1+1)
4. HORT.-302	Medicinal and Aromatic Crops	3(2+1)
5. HORT.-353	Breeding and Seed Production of Flower and Ornamental Crops	3(2+1)
6.	Total	8+5=13

SEMESTER-II**HORT 153: Ornamental Horticulture Theory****3(2 +1)**

History, definitions, scope of ornamental horticulture, aesthetic values, Floriculture industry, Importance, area and production, industrial importance of ornamental plants and flowers. Importance, classification, design values and general cultivation aspects for ornamental plants *viz.* annuals, biennales herbaceous perennials, grasses and bulbous ornamentals. shrubs, climbers, trees, indoor plants, palms and cycads, ferns and sellagenellas, cacti and succulents. History of gardening in India. Importance, design and establishment of garden features/components *viz.* hedge, edge, borders, flower beds, bridges, paths, drives, fences, garden walls, gates, carpet bed, arbour, patio, decking, retaining walls, shade garden, sunken garden, roof garden, terrace garden, pebble garden, rockery, pools, waterfalls, fountains, bog garden, avenue planting and children garden. Lawn types, establishment and maintenance. Importance of Garden adornments *viz.* floral clock, bird bath, statues, sculptures, lanterns, water basins, garden benches etc.. Importance of flower arrangement, Ikebana, techniques, types, suitable flowers and cut foliage, uses of vertical garden, bottle garden, terrariums, art of making bonsai, culture of bonsai and maintenance.

Practical

Identification and description of annuals, biennials, herbaceous perennials, climbers, shrubs, trees, indoor plants, ferns and sellagenellas, Palms and cycads and Cacti and succulents. Planning and designing and establishment of garden features *viz.* lawn, hedge and edge, rockery, water garden, carpet bedding, shade garden, roof garden, Study and creation of terrariums, vertical garden, study and practice of different types of flower arrangements, preparation of floral bouquets, preparation of floral rangoli, veni etc., Study of Bonsai techniques, Bonsai practicing and training. Visit to nurseries and floriculture units.

SEMESTER-III

HORT 203: Commercial Floriculture**3 (2+1)****Theory**

Scope and importance of commercial floriculture in India. Production techniques of commercial flower crops like rose, marigold, chrysanthemum, orchid, carnation, jasmine, crossandra, anthurium, bird of paradise, china aster and gerbera for domestic and export market. Production techniques of flowers and foliage, filler materials, growing of flowers under protected environments such as glass house, plastic house etc. Postharvest technology of cut flowers in respect of commercial flower crops. Dehydration technique for drying of flowers and foliage. Production techniques for bulbous crops like gladiolus, dahlia, tuberose.

Practical

Identification of commercially important floricultural crops. Horticultural practices in commercial crops. Sowing of seeds and raising of seedlings of annuals. Propagation of commercial crops by cutting, layering, budding, grafting and other methods. Training and pruning of roses. Use of chemicals and other compounds for prolonging the vase life of cut flowers. Drying and preservation of flowers and foliage. Flower arrangement practices.

HORT 204: Principles of Landscape Architecture**2(1 +1)****Theory**

Historical Importance of Indian gardens, Gardens of ancient world, Definitions, Famous gardens of India and abroad, formal, informal, free style and wild gardens, basic themes of gardens viz. circular, rectangular and diagonal themes, Steps in preparation of garden design. Use of Auto CAD and Arch CAD in designing gardens. Factors affecting landscape design viz. initial approach, view, human choice, simplicity, topography etc., Principles of Landscape gardens viz. Axis, rhythm, balance, time and light, space, texture, form, mass effect, focal point, mobility, emphasis, unity and harmony etc.. Elements of landscape gardens viz. tangible and intangible elements. Bio-aesthetic planning, definition, objectives, planning and designing of home gardens, colonies, country planning, urban landscape, Development of institutional gardens, planning and planting of avenues, beautifying educational Institution, railway lines, railway stations, factories, air ports, corporate buildings, dams, hydro electric stations, river banks, play grounds, gardens for places of religious importance viz. temples, churches, mosques, tombs etc, Importance, features and establishment of English garden, Japanese gardens, Mughal, gardens, Hindu gardens and Buddhist gardens, Xeriscaping, definition, principles and practice.

Practical

Study of garden equipments. Study of Graphic language, Use of drawing equipments, graphic symbols and notations in landscaping designing, Study and designing of different styles of gardens, Study and designing of gardens based on different themes, Designing gardens using Auto-cad/

archi-cad, Designing gardens for home, traffic islands, schools and colleges, public buildings, factories, railway stations, air ports, temples, churches, play grounds, corporate buildings/ malls. Designing and planting of avenues for state and National highways, Design and establishment of Japanese, English and Mughal gardens. Visit to public, institutional and botanical gardens.

SEMESTER-VI

HORT 302: Medicinal and Aromatic Crops**3(2+1)****Theory**

History, scope, opportunities and constraints in the cultivation and maintenance of medicinal and aromatic plants in India. Importance, origin, distribution, area, production, climatic and soil requirements, propagation and nursery techniques, planting and after care, cultural practices, training and pruning, nutritional and water requirements. Plant protection, harvesting and processing of under mentioned important medicinal and aromatic plants. Study of chemical composition of a few important medicinal and aromatic plants, extraction, use and economics of drugs and essential oils in medicinal and aromatic plants. Therapeutic and pharmaceutical uses of important species. Storage techniques of essential oils. Medicinal Plants: *Withania*, periwinkle, rauwolfia, dioscorea, isabgol, opium poppy *Ammi majus*, belladonna, cinchona, pyrethrum and other species relevant to local conditions. Aromatic Plants: citronella grass, khus grass, flag (baje), lavender, geranium, patchouli, bursera, menthe, musk, occimum and other species relevant to the local conditions. Marketing.

Practical Collection of medicinal and aromatic plants from their natural habitat and study their morphological description, nursery techniques, harvesting, curing and processing techniques and extraction of essential oils.

HORT 353: Breeding and Seed Production of Flower and Ornamental plants 3(2+1)**Theory**

History of improvements of ornamental plants, Centre of origin of flower crops and ornamental crops, objectives and techniques in ornamental plant breeding. Introduction, selection, hybridization, mutation and biotechnological technique for improvement of ornamental and flower crops viz., rose, jasmine, chrysanthemum, tuberose, gerbera, gladiolus, dahlia, liliun, petunia, hibiscus, bouganvillea, zinnia, cosmos, dianthus, snapdragon, pansy, crossandra, marigold, antirrhinum, china aster, orchids, anthurium, carnation, hibiscus etc. Breeding for disease resistance; development of promising cultivars of important ornamentals and flower crops. Role of heterosis and its exploitation; production of F1 hybrids and utilization of male sterility, production of open pollinated seed. Harvesting processing and storage of seeds, seed certification.

Practical

Study of floral biology and pollination in important species and cultivars. Techniques of inducing polyploidy and mutation. Production of pure and hybrid seeds. Harvesting, conditioning and testing of seeds. Practice in seed production methods.

Course No	Course title	Credits
1st semester		
FLA 501	NURSERY MANAGEMENT & PLANT PROPAGATION TECHNIQUES	2+1
FLA-502	ENVIRONMENTAL CONTROL OF GROWTH & DEVELOPMENT IN FLORICULTURE CROPS	2 + 1
FLA 503	GREENHOUSE MANAGEMENT	1+1
FLA504	NUTRITIONAL REQUIREMENTS OF ORNAMENTAL PLANTS	1+1
FLA505	PLANT GROWTH SUBSTANCES AND THEIR USES IN ORNAMENTALS	1+1
FLA 506	WATER MANAGEMENT FOR ORNAMENTAL PLANTS	1+1
2nd Semester		
FLA-551	BREEDING OF FLOWER CROPS AND ORNAMENTAL PLANTS	1+1
FLA 552	PRODUCTION TECHNOLOGY OF CUT FLOWERS	2+1
FLA 553	LANDSCAPING AND ORNAMENTAL GARDENING	2+2
FLA-554	CAD FOR OUTDOOR AND INDOORSCAPING	1+1
3rd Semester		
FLA 601	TURFING AND TURF MANAGEMENT	2+1
FLA 602	PRODUCTION TECHNOLOGY FOR LOOSE FLOWERS	2+1
FLA 649	SEMINAR-1	1+0
4th Semester		
FLA 651	VALUE ADDITION IN FLOWERS	1+2
FLA 699	SEMINAR-II	1+0
FLA 700	MASTER'S RESEARCH	0+20