UNIT- I: PRINCIPLES OF HORTICULTURE

UNIT - II: PROPAGATION AND NURSERY TECHNIQUES OF HORTICULTURAL CROPS
UNIT - III: GROWTH AND DEVELOPMENT OF HORTICULTURAL CROPS

Important phases of growth and development – Definitions, photosynthetic productivity, leaf area index (LAI) – optimum LAI in horticultural crops. Canopy development: Different stages of growth, growth curves, growth analysis in horticultural crops. Plant bio-regulators – Auxin, gibberellin, cytokinin, ethylene, inhibitors and retardants, basic functions, biosynthesis, role in crop growth and development, propagation, flowering, fruit setting, fruit thinning, fruit development, fruit drop and fruit ripening. physiological basis of training and pruning, source and sink relationship. Seed development and maturation, seed dormancy and bud dormancy, causes and breaking methods in horticultural crops. factors affecting flowering, physiology of flowering, photoperiodism in horticultural crops. Physiology of fruit growth and development, fruit setting, ripening- study of chemical manipulations on growth and development, understanding stress impact on growth and development.

UNIT - IV: BREEDING OF HORTICULTURAL CROPS

UNIT – V: PRODUCTION TECHNOLOGY OF FRUIT CROPS


UNIT - VI: PRODUCTION TECHNOLOGY OF VEGETABLE CROPS

Scope and importance of warm, cool and underexploited vegetable crops -Current scenario on national and international level of production and trade of vegetable crops - Types of vegetable farming - Commercial varieties / hybrids - Climatic and soil requirements – Seasons - Seed rate and seed treatment - Nursery management - Protray nursery - Sowing/planting - Cropping systems – Nutrient management – Fertigation - Irrigation management – Plant growth regulators - Intercultural operations, weed management – Mulching - Biotic and abiotic stresses and their management - Nutrient deficiency and physiological disorder and its corrective measures - Maturity standards – Harvesting - Post harvest management -Protected cultivation – Precision farming - Seed production techniques of vegetable crops: Tomato, Brinjal, Chilli and Capsicum (Sweet pepper), Bhendi, Leguminous Vegetables (Beans, Peas, Cluster beans - Cowpea - Dolichos bean); Bulbous vegetables (onion); Tuber crops - (Potato, Tapioca, Sweet potato, Elephant footyam, Colacassia); Cucurbitaceous Vegetables (Cucumber, Bittergourd, Snakegourd, Ridgegourd, Ashgourd, Musk melon, Watermelon, Pumpkin) - Cruciferous vegetables (Cabbage, Cauliflower and Knolkhhol); Root vegetables (Carrot, Radish, Beetroot, Turnip) - Leafy vegetables (Spinach, Lettuce, Palak, Amaranthus) – Perennial vegetables (Drumstick, Coccinea) – Underexploited vegetables.
UNIT - VII: PRODUCTION TECHNOLOGY OF COMMERCIAL FLOWER CROPS AND LANDSCAPING

Scope and importance of floriculture industry - Loose flower production and trade - National and international status – Commercial varieties/ hybrids - Climatic and soil requirements - Field preparation – Season - Systems of planting, transplanting techniques - Precision farming techniques - Water and nutrient management, Weed management - Training and pruning, Special horticultural practices - Pinching, disbudding, use of growth regulators - Physiological disorders and remedies – Biotic and abiotic stress management - Harvest indices, harvesting techniques - Post -harvest handling and grading, pre-cooling, packing and storage, transportation and marketing. value addition - Dry flowers - Pigment extraction - Concrete and essential oil extraction of important loose flower crops – Jasmine, Scented Rose, Chrysanthemum, Tuberose, Marigold, Crossandra, Celosia, Gomphrena, Nerium.

Scope and importance of cut flowers - Production and trade - Global and National scenario - Special nursery practices, growing environment, open cultivation, protected cultivation, soil requirements, soil decontamination techniques, planting methods, influence of environmental parameters, light, temperature, moisture, humidity and CO₂ on growth and flowering - Water and nutrient management, Fertigation, weed management, ratooning, training and pruning, special horticultural practices - Use of growth regulators, flower forcing and year round flowering through physiological interventions, chemical regulation, physiological disorders and remedies, environmental manipulation – Biotic and abiotic stress management - Cut flower standards and grades, harvest indices, harvesting techniques, post-harvest handling of cut Rose, cut Chrysanthemum, carnation, gerbera, anthurium, orchids, gladiolus, cut foliages and fillers.

features and water conservation – Speciality garden – Dish, terrarium, bottle, miniature, bog and rock garden. Lawn – Classification of turf grasses - Conditions for healthy turf - Soil properties, micro irrigation, nutrient management – Turf grass establishment and maintenance – Astroturf and maintenance - Overview of software for Computer Aided Design and Drafting (CADD) - AUTOCAD plants and design - AUTOCAD - File handling.

UNIT - VIII: PRODUCTION TECHNOLOGY OF SPICES AND PLANTATION CROPS


UNIT - IX: PRODUCTION TECHNOLOGY OF MEDICINAL AND AROMATIC CROPS

UNIT - X: POST- HARVEST TECHNOLOGY OF HORTICULTURAL CROPS

UNIT-I: GENERAL SCIENCE


Chemistry Elements and Compounds-Acids, bases and salts-Oxidation and reduction-Chemistry of ores and metals-Carbon, nitrogen and their compounds-Fertilizers, pesticides, insecticides-Biochemistry and biotechnology-Electrochemistry-Polymers and plastics.

Botany Main Concepts of life science-The cell-basic unit of life-Classification of living organism-Nutrition and dietetics-Respiration-Excretion of metabolic waste-Bio-communication.

Zoology Blood and blood circulation-Endocrine system-Reproductive system-Genetics the science of heredity-Environment, ecology, health and hygiene, Bio- diversity and its conservation-Human diseases-Communicable diseases and non- communicable diseases-prevention and remedies- Alcoholism and drug abuse-Animals, plants and human life

UNIT- II: CURRENT EVENTS


Geography Geographical landmarks-Policy on environment and ecology.

Economics Current socio-economic problems-New economic policy & govt. sector

Science Latest inventions on science & technology-Latest discoveries in Health Science-Mass media & communication.
UNIT-III : GEOGRAPHY

Earth and Universe - Solar system-Atmosphere hydrosphere, lithosphere - Monsoon, rainfall, weather and climate - Water resources - rivers in India-Soil, minerals & natural resources - Natural vegetation - Forest & wildlife-Agricultural pattern, livestock & fisheries -Transport including Surface transport & communication - Social geography – population -density and distribution-Natural calamities – disaster management-Climate change - impact and consequences - mitigation measures - Pollution Control.

UNIT-IV: HISTORY AND CULTURE OF INDIA

Pre-historic events -Indus valley civilization-Vedic, Aryan and Sangam age-Maurya dynasty-Buddhism and Jainism-Guptas, Delhi Sultans, Mughals and Marathas-Age of Vijayanagaram and the bahmanis-South Indian history - Culture and Heritage of Tamil people-Advent of European invasion-Expansion and consolidation of British rule - Effect of British rule on socio-economic factors-Social reforms and religious movements - India since independence-Characteristics of Indian culture-Unify in diversity – race, colour, language, custom-India-as secular state-Organizations for fine arts, dance, drama, music-Growth of rationalist, Dravidian movement in TN-Political parties and populist schemes- Prominent personalities in the various spheres – Arts, Science, literature and Philosophy – Mother Teresa, Swami Vivekananda, Pandit Ravishankar , M.S.Subbulakshmi, Rukmani Arundel and J.Krishnamoorthy etc.

UNIT-V: INDIAN POLITY


UNIT- VI: INDIAN ECONOMY


UNIT-VII: INDIAN NATIONAL MOVEMENT

National renaissance-Early uprising against British rule-1857 Revolt- Indian National Congress-Emergence of national leaders-Gandhi, Nehru, Tagore, Nethaji -Growth of militant movements -Different modes of agitations-Era of different Acts & Pacts-World war & final phase struggle-Communalism led to partition-Role of Tamil Nadu in freedom struggle - Rajaji, VOC, Periyar, Bharathiar & Others-Birth of political parties /political system in India since independence.

UNIT-VIII: APTITUDE AND MENTAL ABILITY TESTS