

Horticulture Today

Grade 9+

1 Credit

based on *Horticulture Today*, 2nd Edition ©2025

This course introduces the student to all aspects of horticulture, including how plants are named, parts of plants, plant reproduction, what is required for good growth, various methods of plant propagation, greenhouse management and crops, container-grown plants, using plants in the landscape, pest control, lawn and turf management, the vegetable garden, and the small fruit garden.

LightUnit 1	LightUnit 2	LightUnit 3	LightUnit 4	LightUnit 5
The Horticulture Industry What is Plant Science? Edible and Ornamental Horticulture, Organic and Sustainable Production, Eating Local, The Green Industry Worker and Tool Safety Early American Labor, Safety and Health Agencies, Safety Hazards, Preventing Accidents, Practicing Safety, Maintaining Tools and Equipment, Labor Laws Workplace Safety Documents	Plant Taxonomy A History of Plant Taxonomy, A System of Botanical Classification, Plant Keys, Herbaria Plant Biology Study of Botany, Plant Cells, Plant Tissues, Plant Parts and Their Functions Plant Growth and Development Photosynthesis, Respiration, Transpiration, Movement of Solutes, Reproduction, Plant Breeding Principles	Environmental Conditions for Growth Light, Optimizing Light Quality, Temperature, Managing Temperatures, Water Soils and Media What Is Soil? Soil Formation, Physical Properties of Soil, Biological Properties of Soil, Chemical Properties of Soil, Soilless Media, Mulch, Containers	Plant Nutrition Essential Elements, Mineral Nutrient Uptake, Nutrient Sources, Fertilizer Calculations, Methods of Fertilizer Application Seed Propagation Seed Morphology and Development, Seed Germination, Seed Dormancy, Seed Propagation Techniques, Seed Selection, Seed Production Stem and Leaf Propagation Biological Principles of Leaf and Stem Propagation, Plant Material Used for Stem and Leaf Cuttings, Hardening Off, Rooting Medium, Plant Growth Regulators	Layering and Division Layering in Propagation, Layering Techniques, Natural Layering, Crown Division, Division and Separation of Geophytes Grafting and Budding Benefits of Grafting, Successful Grafting, Timing Grafting, Selecting Scion Wood, Types of Grafts, Budding Tissue Culture: Micropropagation History, Advantages and Disadvantages, Environmental Requirements, Growth Media, Stages of Micropropagation, The Future of Tissue Culture and Micropropagation
LightUnit 6	LightUnit 7	LightUnit 8	LightUnit 9	LightUnit 10
Greenhouse Operation and Maintenance Greenhouse Planning, Greenhouse Structures, Greenhouse Components, Maintaining Structures and Equipment Greenhouse Production Environmental Requirements, Crop Inputs, Plant Materials, Greenhouse Crops Alternative Growing Methods Hydroponics, Aquaponics, Vertical Gardening, Rooftop Gardening	Nursery Production Market Niche, Production Methods, Sustainable Nursery Production Vegetable Production Vegetables for Health, Vegetable Markets in the United States, Environmental Factors, Production Methods, Postharvest Handling and Storage Fruit and Nut Production Fruits for Health, Fruit Markets in the United States, Small Fruits, Tree Fruits and Nuts, Vine Fruits	Landscape Design The Design Process, Elements and Principles of Landscape Design, Tools of Landscape Design, Xeriscaping Design, Water Garden Landscape Design Landscape Installation and Maintenance Landscape Design Plans, Site Preparation, Hardscape Installation, Planting the Design, Landscape Maintenance, Landscaping Business Turfgrass Management Turfgrass Industry, Turfgrass Morphology and Types, Lawn Establishment, Turf Maintenance, Turf Renovation	Integrated Pest Management Creating an IPM, Pests, Control Measures, Inspection and Monitoring, Action Thresholds Insects Anatomy, Growth and Development, Chemical Signals, Taxonomy, Agricultural Pests and Beneficials, Collecting Insects	Disease Management Disease Development, Organisms That Cause Disease, Types of Disease, Disease Cycle, Signs and Symptoms of Disease, Managing Plant Diseases, Disease Index Weeds Definition of a Weed, Weed Characteristics, Weed Biology, Weed Identification, Weed Management Pesticide Management and Safety Types of Pesticides, Pesticide Formulations, Pesticide Labels, Pesticide Application, Toxicity, Storage and Disposal