**SYLLABUS**

**INTRODUCTION TO HORTICULTURE**

**Updated Spring 2025**

**Course Description:**

*Introduction to Horticulture* (3 or 4 semester hours). An introduction to the principles and practices in the development, production and use of horticultural crops (fruits, vegetables, greenhouse, turf, nursery, floral and landscape). Includes the classification, structure, growth and development, and environmental influences on horticultural plants: horticultural technology: and an introduction to the horticultural industries. For a 4 credit hour course, a lab component is required for IAI approval.

**Upon course completion the student will be able to do the following:**

1. Define horticulture and describe its significance to society.
2. Identify major horticulture industry sectors and explore related careers.
3. Describe plant anatomy and physiological functions.
4. Demonstrate knowledge of environmental and nutritional factors affecting plant growth.
5. Apply plant propagation techniques including sexual and asexual methods.
6. Explain integrated pest management strategies.
7. Explore greenhouse structures, hydroponics, and climate control systems.
8. Describe and apply principles of landscape and floral design.
9. Demonstrate knowledge of key horticultural production systems including vegetable, fruit, and turfgrass management.
10. Recognize sustainable, regenerative, and organic practices within horticulture.

**Suggested Texts (Current Editions):**

1. *Introductory Horticulture* by H. Edward Riles and Carroll Shry. Cengage.
2. *Horticulture Principles & Practices* by George Acquah. Pearson.
3. *Biology of Horticulture* by Preece, John E. and Read, Paul E.
4. *Horticultural Science* byJanick. Freeman & Company.
5. *Introduction to Horticulture* by Robert Skirvin. Stipes.
6. *Plant Science: Growth, Development and Utilization of Plants* by McMahon, Kofranek, and Rubatsky.
7. *Home Horticulture Principles and Practices,* Marietta Loehrlein, Delmar & Cengage
8. *Practical Horticulture Laura Rice & Robert Rice Pearson*
9. *Horticulture Today* by Riedel and Driscoll*.* G-W Publisher
10. *Ornamental Horticulture:* Science, Operations, & Management by Ingels, J. Delmar

**Supplemental Materials List**

1. MyCaert Horticulture 5E Lessons & E-Units
2. Botany for Gardeners, Revised Edition, by Brian Capon
3. Documentaries:
   1. Botany of Desire
   2. Billion Dollar Flower Market
   3. Lord of the Guord
   4. Seedy Side of Plants
   5. Botany: A Blooming History
   6. What Plants Talk About
   7. Kingdom of Plants

**Course Outline:**

*The following list includes topics that could be introduced to students at an introductory level in the Introduction to Horticulture class. Specific units/topics covered are up to the discretion of the instructor based on individual program structure and goals.*

Topics (Contact Hours)

Unit 1: Foundations of Horticulture (3-4)

* Scope and Importance: Local to Global
* Historical Perspectives
* Careers in Horticulture

Unit 2: Plant Classification and Identification (3-4)

* Introduction to Principles of Scientific Classification
* Common Horticultural Plant ID: fruits, vegetables, ornamentals, turf

Unit 3: Plant Anatomy & Physiology (3-4)

* Plant Structures: Roots, Stems, Leaves, Flowers, Fruits, Seeds
* Photosynthesis, Respiration, Transpiration

Unit 4: Environmental & Cultural Factors (6-8)

* Light, Temperature, Water, Humidity
* Soil and Soilless Media
* Mineral Nutrition and Fertilizer Calculations

Unit 5: Plant Propagation (6-8)

* Sexual Propagation: Seeds, Germination
* Asexual Propagation: Cuttings, Grafting, Layering, Division

Unit 6: Greenhouse & Controlled Environments (6-8)

* Greenhouse Structures and Materials
* Climate Control and Automation
* Introduction to Hydroponics

Unit 7: Pest and Disease Management (3-4)

* Common Pests, Weeds, and Diseases
* Integrated Pest Management (IPM) Techniques
* Safe Pesticide Use and Regulations

Unit 8: Horticultural Practices and Design (6-8)

* Pruning Tools and Techniques
* Landscape Design Principles and Plant Selection
* Floral Design History, Tools, and Basic Arrangements

Unit 9: Horticulture Crop Production (6-8)

* Fruit and Vegetable Production
* Turf Management
* Cannabis Cultivation

Unit 10: Horticulture and Society (6-8)

* Local Foods, Sustainability, Organic Farming
* Industry Engagement and Field Experience

Additional Optional Topics

* Biotechnology and GMOs
* Maple Syrup Production
* Native Plants

**Assessment Methods:**

* Exams and Quizzes
* Plant Identification Tests
* Hands-on Lab Activities and Demonstrations
* Floral or Landscape Design Project
* Career Exploration Assignment
* Final Exam