

Mastering Modern Horticulture: From Plant Basics to Advanced Gardening Techniques

25 January – 5 February 2027
Madrid

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Training Center

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Mastering Modern Horticulture: From Plant Basics to Advanced Gardening Techniques

Ref: 36390_44146 **Date:** 25 January – 5 February 2027 **Location:** Madrid **Fees:** 10000 Euro

Course Overview:

This course offers a comprehensive exploration of horticulture for professionals looking to enhance their skills. Participants will learn about essential topics like plant cells, reproductive systems, microclimates, and soil water balance, all vital to plant health and development.

The program emphasizes sustainable garden planning, protected cultivation techniques, and biodiversity integration. Participants will also explore advancements in hydroponics, organic horticulture, and climate-responsive irrigation, equipping them with the tools to succeed in modern horticulture while promoting productivity and ecological balance.

Target Audience:

- Horticulturists and agricultural professionals
- Landscape designers and urban planners
- Sustainability officers and environmental consultants
- Gardening enthusiasts aspiring to professional levels
- Educators and researchers in plant sciences

Targeted Organizational Departments:

- Landscaping and grounds maintenance
- Urban agriculture and community gardening initiatives
- Agricultural research and development teams
- Sustainability and environmental impact divisions
- Facility management overseeing indoor plant care

Targeted Industries:

- Agriculture and agribusiness
- Landscaping and garden design
- Urban development and planning
- Environmental consultancy
- Hospitality e.g., resorts, golf courses, and theme parks
- Educational institutions horticulture training and research

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Course Offerings:

By the end of this course, participants will be able to:

- Analyze factors influencing plant growth and development
- Implement soil water balance and pH management strategies
- Develop microclimate-responsive gardening techniques
- Integrate organic methods into horticultural practices
- Utilize hydroponics and soilless farming systems
- Plan sustainable gardens incorporating biodiversity principles
- Manage pests, diseases, and weeds effectively
- Apply knowledge of plant classification and naming to enhance design

Training Methodology:

This course employs a blend of interactive lectures, practical demonstrations, and hands-on projects to ensure deep learning. Participants will engage in group activities, including case studies on climate impact and biodiversity. Field exercises will enhance skills in plant classification and irrigation techniques. Daily reflection sessions and real-time feedback will foster collaborative learning, ensuring participants leave with actionable insights.

Course Toolbox:

- Comprehensive ebooks on horticultural principles
- Access to online resources and e-libraries for further study
- Case studies highlighting sustainable practices
- Templates for garden planning and design projects

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Course Agenda:

Day 1: Introduction to Horticulture and Plant Basics

- **Topic 1:** The nature and scope of horticulture
- **Topic 2:** Climate and microclimate impact on plant growth
- **Topic 3:** Plant classification and naming conventions
- **Topic 4:** External characteristics of plants
- **Topic 5:** Understanding plant cells and tissues
- **Topic 6:** Basics of photosynthesis and respiration
- **Reflection & Review:** Discuss the foundational importance of horticulture and plant biology

Day 2: Plant Reproduction and Growth

- **Topic 1:** Plant reproductive systems and pollination techniques
- **Topic 2:** Fertilization and seed formation
- **Topic 3:** Vegetative propagation methods
- **Topic 4:** Factors influencing plant growth and development
- **Topic 5:** Seasonal cropping and growth cycles
- **Topic 6:** Horticultural plant selection tips
- **Reflection & Review:** Practical applications of plant reproduction methods

Day 3: Soil Management and Plant Nutrition

- **Topic 1:** Physical and chemical properties of soil
- **Topic 2:** Soil pH and its role in plant health
- **Topic 3:** Soil water balance and irrigation techniques
- **Topic 4:** Nutrient cycles and plant nutrition essentials
- **Topic 5:** Organic matter management in soils
- **Topic 6:** Alternatives to traditional soil mediums
- **Reflection & Review:** Discuss soil health's impact on sustainable horticulture

Day 4: Pest, Disease, and Weed Management

- **Topic 1:** Identification of horticultural pests and their life cycles
- **Topic 2:** Common horticultural diseases and disorders
- **Topic 3:** Weed biology and control methods
- **Topic 4:** Integrated pest management strategies
- **Topic 5:** Plant protection methods and biological control
- **Topic 6:** Environmental impact of pest and weed control
- **Reflection & Review:** Discuss balancing pest control with sustainability

Day 5: Protected Cultivation Techniques

- **Topic 1:** Types of protected structures greenhouses, tunnels
- **Topic 2:** Microclimate management in controlled environments
- **Topic 3:** Hydroponics and soilless farming systems
- **Topic 4:** Irrigation methods for protected cultivation
- **Topic 5:** Role of light, temperature, and humidity control
- **Topic 6:** Advanced technologies in protected horticulture
- **Reflection & Review:** Discuss innovations in protected cultivation

Day 6: Outdoor Cultivation Techniques

- **Topic 1:** Outdoor vegetable and fruit production
- **Topic 2:** Cultural operations and site preparation
- **Topic 3:** Successional cropping and intercropping
- **Topic 4:** Sustainable garden planning and design
- **Topic 5:** Turf and lawn management practices
- **Topic 6:** Soil and plant health in outdoor systems
- **Reflection & Review:** Evaluate effective outdoor growing practices

Day 7: Horticultural Design and Landscaping

- **Topic 1:** Principles of garden design and landscaping
- **Topic 2:** Plant selection for ornamental purposes
- **Topic 3:** Designing with trees, shrubs, and groundcovers
- **Topic 4:** Role of biodiversity in landscape planning
- **Topic 5:** Use of water features and hardscapes
- **Topic 6:** Seasonal landscape maintenance
- **Reflection & Review:** Review case studies in garden and landscape design

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Day 8: Advanced Techniques in Horticulture

- **Topic 1:** Genetic modification and plant breeding innovations
- **Topic 2:** Precision agriculture in horticulture
- **Topic 3:** Fertigation and advanced nutrient application
- **Topic 4:** Climate-responsive plant selection
- **Topic 5:** Advanced pruning and grafting techniques
- **Topic 6:** Companion planting and ecological balance
- **Reflection & Review:** Discuss advanced tools and techniques in horticulture

Day 9: Sustainability in Horticulture

- **Topic 1:** Organic horticulture principles and practices
- **Topic 2:** Waste management and composting
- **Topic 3:** Carbon footprint reduction in horticultural practices
- **Topic 4:** Renewable energy applications in horticulture
- **Topic 5:** Role of sustainable irrigation and water conservation
- **Topic 6:** Conservation of native plant species
- **Reflection & Review:** Explore how sustainability aligns with horticultural goals

Day 10: Future Trends and Practical Applications

- **Topic 1:** Emerging trends in urban horticulture
- **Topic 2:** Indoor plant care and vertical gardening
- **Topic 3:** Technological innovations in horticulture
- **Topic 4:** Eco-friendly plant protection strategies
- **Topic 5:** Career opportunities in modern horticulture
- **Topic 6:** Final project presentations and feedback
- **Reflection & Review:** Discuss how to integrate learnings into practical applications

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FAQ:

- ### What specific qualifications or prerequisites are needed for participants before enrolling in the course?

  No prior qualifications are required. However, a basic interest in horticulture or gardening is beneficial.

- ### How long is each day's session, and is there a total number of hours required for the entire course?

  Each session spans 4-5 hours, totalling approximately 20-25 hours over one week.

- ### What role does soil pH play in plant health, and how can it be managed effectively?

  Soil pH influences nutrient availability and root health. It can be managed by adding lime to reduce acidity or sulfur to increase it.

How This Course is Different from Other Horticulture Courses:

This course offers a holistic approach, blending scientific principles with real-world applications. Participants benefit from insights into microclimates, hydroponics, and organic practices while learning to adapt to climate challenges. Emphasis on biodiversity, sustainability, and innovative irrigation methods makes this course unique in addressing modern horticulture demands.