Training Course on Protected Cultivation (Greenhouse) Technology and Management

Professional Development Training Course Outline

Category	Agriculture	**Duration**	10 Days
Base Fee	$3,000 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

Training Course on Protected Cultivation (Greenhouse) Technology and Management is designed to equip participants with practical skills, modern techniques, and strategic insights necessary for successful greenhouse farming. As global climate patterns become increasingly erratic and demand for sustainable agriculture intensifies, protected cultivation offers a controlled, high-efficiency environment that boosts crop productivity, minimizes pest attacks, and conserves resources. This course explores the full lifecycle of greenhouse crop management—from structural setup and climate control to integrated pest management (IPM), fertigation, and high-value crop production.

The course focuses on the application of smart agriculture, precision farming, and climate-resilient crop techniques to enable farmers, agripreneurs, extension agents, and agribusiness investors to achieve higher returns on investment. With cutting-edge insights into solar greenhouse design, IoT integration, organic practices, and hydroponics, this course bridges the gap between traditional farming and futuristic sustainable agriculture. Participants will also benefit from region-specific case studies, expert-led sessions, and hands-on demonstrations.

Programme Curriculum

Training Course on Protected Cultivation (Greenhouse) Technology and Management

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Course Objectives

1. Understand the fundamentals of protected cultivation and greenhouse technology.
2. Identify and construct different types of greenhouse structures for various agro-climatic zones.
3. Learn climate control systems including temperature, humidity, CO?, and ventilation.
4. Apply precision irrigation and fertigation techniques for optimal crop growth.
5. Explore the use of hydroponics and vertical farming in greenhouse setups.
6. Develop IPM strategies to control pests and diseases sustainably.
7. Implement high-yield, climate-resilient crop planning.
8. Utilize sensor-based automation and IoT in greenhouse management.
9. Promote organic greenhouse cultivation practices.
10. Calculate cost-benefit analysis for greenhouse projects.
11. Learn post-harvest techniques to ensure supply chain efficiency.
12. Design a business model for commercial greenhouse farming.
13. Analyze real-world case studies of successful greenhouse ventures.

Target Audiences

1. Commercial farmers
2. Agri-entrepreneurs
3. Horticulture officers
4. Agribusiness investors
5. Agricultural extension workers
6. Agriculture students and researchers
7. NGO staff in food security
8. Government policymakers and planners

Course Duration: 10 days

Course Modules

Module 1: Introduction to Protected Cultivation

- Definition and importance
- Evolution and global trends
- Benefits and limitations
- Types of protected structures
- Site selection
- **Case Study:** Greenhouse adoption in arid regions of Kenya

Module 2: Greenhouse Structure Design

- Materials used (polyhouse, glass, net house)
- Structural components and ventilation
- Heating and cooling systems
- Orientation and layout planning
- Solar energy integration
- **Case Study:** Low-cost polyhouse design for smallholders

Module 3: Environmental Control Systems

- Monitoring temperature and humidity
- Use of thermostats and sensors
- Ventilation and shading
- Humidification systems
- Climate control automation
- **Case Study:** IoT-based microclimate control in India

Module 4: Crop Selection and Planning

- Suitable crops for greenhouses
- Seasonal planning
- Crop rotation
- Companion planting
- Harvest cycles
- **Case Study:** Tomato yield optimization in Rwanda

Module 5: Irrigation and Fertigation Management

- Drip irrigation systems
- Fertigation scheduling
- Water quality management
- EC and pH control
- Automation tools
- **Case Study:** Precision fertigation in Ethiopia

Module 6: Soil and Soilless Media Management

- Types of soilless media (cocopeat, perlite)
- Soil sterilization
- Organic substrates
- Media reuse and disposal
- Nutrient solution preparation
- **Case Study:** Hydroponics success in urban Nigeria

Module 7: Integrated Pest and Disease Management (IPDM)

- Common greenhouse pests
- Biological control agents
- Use of sticky traps and barriers
- Organic pesticides
- Preventive measures
- **Case Study:** Biological control of whiteflies in Israel

Module 8: Pollination and Growth Management

- Manual and natural pollination methods
- Plant training and pruning
- Hormonal treatments
- Use of growth regulators
- Managing light and CO?
- **Case Study:** Pollination challenges in cucumber farming

Module 9: Harvesting and Post-Harvest Handling

- Harvest indicators

- Handling techniques
- Storage conditions
- Packaging for markets
- Cold chain logistics
- **Case Study:** Export quality capsicum from greenhouses in Uganda

Module 10: Organic Greenhouse Cultivation

- Organic standards and certification
- Composting and organic inputs
- Natural disease control
- Organic market access
- Cost implications
- **Case Study:** Organic strawberry production in Morocco

Module 11: Smart Farming and Automation

- Role of IoT in greenhouses
- Sensor deployment
- Remote monitoring tools
- Data-driven decision-making
- AI and predictive modeling
- **Case Study:** AI-powered greenhouse in the Netherlands

Module 12: Business Planning and ROI Analysis

- Initial investment and budgeting
- Break-even analysis
- Marketing strategies
- Risk assessment
- Funding sources
- **Case Study:** Profitable greenhouse startup by youth in Ghana

Module 13: Greenhouse for Floriculture

- Flower crop selection
- Post-harvest handling for flowers
- Value addition
- Export markets
- Aesthetic greenhouse setup
- **Case Study:** Rose exports from greenhouses in Ethiopia

Module 14: Climate-Resilient and Vertical Farming

- Vertical farming structures
- Urban agriculture
- Climate-smart design
- Space optimization
- Sustainable inputs
- **Case Study:** Rooftop vertical farming in South Africa

Module 15: Scaling Up and Policy Engagement

- Government schemes and subsidies
- Public-private partnerships
- Policy recommendations

- Extension services
- Farmer cooperatives
- **Case Study:** Policy-driven greenhouse adoption in Rwanda

Training Methodology

- Expert-led interactive lectures
- Practical demonstrations and field visits
- Real-time case study discussions
- Group exercises and problem-solving sessions
- Audio-visual tutorials and greenhouse simulations
- Step-by-step project planning templates

Register as a group from 3 participants for a Discount

Send us an email: info@fineskilltrainingcenter.org or call *+254769199797*

Certification

Upon successful completion of this training, participants will be issued with a globally- recognized certificate.

Tailor-Made Course

We also offer tailor-made courses based on your needs.

Key Notes

a. The participant must be conversant with English.

b. Upon completion of training the participant will be issued with an Authorized Training Certificate

c. Course duration is flexible and the contents can be modified to fit any number of days.

d. The course fee includes facilitation training materials, 2 coffee breaks, buffet lunch and A Certificate upon successful completion of Training.

e. One-year post-training support Consultation and Coaching provided after the course.

f. Payment should be done at least a week before commence of the training, to Fineskill Training Center account, as indicated in the invoice so as to enable us prepare better for you.

Upcoming Scheduled Sessions

Start Date	End Date	Location	Price
23 Nov 2026	04 Dec 2026	Online	$2,000
23 Nov 2026	04 Dec 2026	Physical	$3,000
23 Nov 2026	04 Dec 2026	Physical	$6,000

Start Date	End Date	Location	Price
23 Nov 2026	04 Dec 2026	Physical	$6,000
23 Nov 2026	04 Dec 2026	Physical	$12,000
23 Nov 2026	04 Dec 2026	Physical	$9,000
23 Nov 2026	04 Dec 2026	Physical	$12,000
23 Nov 2026	04 Dec 2026	Physical	$12,000

Ready to enroll or request a customized program? Book online or contact us:

Register Online Now

Email: info@fineskilltrainingcenter.com | Website: www.fineskilltrainingcenter.com