Training Course on Aquaculture and Advanced Fish Farming Technologies

Professional Development Training Course Outline

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

Course Introduction

Aquaculture and advanced fish farming technologies are transforming the global seafood industry, offering sustainable solutions to feed the growing population while conserving natural ecosystems. Training Course on Aquaculture and Advanced Fish Farming Technologies is designed to equip participants with cutting-edge knowledge and practical skills in aquaculture innovation, sustainable fish production systems, biosecurity, water quality management, and integrated aquafarming. With rising demand for seafood, climate-smart aquaculture practices and digital technologies like IoT and AI in aquafarming are becoming essential for productivity, traceability, and environmental stewardship.

This course emphasizes profitable aquaculture ventures, eco-friendly practices, smart hatchery management, and disease control techniques. It addresses current challenges such as feed formulation, waste management, genetic improvement, and market access, empowering farmers, entrepreneurs, researchers, and extension agents with the tools to scale up operations and ensure food security. Participants will explore real-life case studies, engage in practical simulations, and learn from top aquaculture experts to build resilient, high-yield fish farming systems that meet local and international standards.

Programme Curriculum

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Course Objectives

1. Understand the fundamentals of aquaculture systems and their global relevance.
2. Explore advanced fish farming technologies including RAS (Recirculating Aquaculture Systems).
3. Enhance knowledge on sustainable aquaculture practices and eco-certification.
4. Apply digital innovations such as IoT and AI in smart fish farming.
5. Improve hatchery management and breeding techniques.
6. Learn water quality monitoring and control methods.
7. Analyze fish feed formulation and cost-effective feeding strategies.
8. Address fish health, disease prevention, and biosecurity protocols.
9. Integrate aquaculture with agriculture for circular economy solutions.
10. Gain insights into climate-resilient and environmentally adaptive fish farming.
11. Understand value chain development and market access strategies.
12. Strengthen skills in aquaculture business planning and risk management.
13. Review real-world aquaculture case studies for best practice adoption.

Target Audiences

1. Fish farmers and aquaculture entrepreneurs
2. Agricultural extension officers
3. Environmental scientists and marine biologists
4. Fisheries and livestock officers
5. NGOs and development practitioners in food security
6. Agricultural students and researchers
7. Policy makers in agriculture and aquaculture
8. Investors and agribusiness consultants

Course Duration: 10 days

Course Modules

Module 1: Introduction to Modern Aquaculture

- History and trends in global aquaculture
- Classification of aquaculture systems
- Economic and nutritional significance
- Regulatory and environmental considerations
- Aquaculture in sustainable food systems
- *Case Study: Evolution of aquaculture in East Africa*

Module 2: Recirculating Aquaculture Systems (RAS)

- Design and components of RAS
- Operational procedures and optimization
- Cost-benefit analysis
- Energy and water use efficiency
- Maintenance best practices
- *Case Study: RAS application in urban fish farms*

Module 3: Sustainable Fish Farming Practices

- Eco-friendly farming approaches
- Organic aquaculture certification
- Environmental impact assessment
- Gender-inclusive practices in aquaculture
- Community-based aquaculture initiatives
- *Case Study: Community-led tilapia farming in Ghana*

Module 4: Smart Technologies in Aquaculture

- Use of IoT and sensors in fish farms
- Data-driven decision-making in aquaculture
- Blockchain for fish traceability
- Automation in feeding and monitoring
- AI applications in fish behavior and health
- *Case Study: IoT-enabled fish farming in India*

Module 5: Hatchery and Broodstock Management

- Hatchery design and setup
- Broodstock selection and genetics
- Spawning and larval rearing
- Stocking density and management
- Health management in hatcheries
- *Case Study: High-yield catfish hatchery in Nigeria*

Module 6: Fish Nutrition and Feed Formulation

- Nutrient requirements of different species
- Feed types and ingredients
- Cost-effective feed production
- Feeding strategies for different growth stages
- Storage and feed quality control
- *Case Study: On-farm feed formulation in Bangladesh*

Module 7: Water Quality Management

- Key water quality parameters
- Tools and methods for monitoring
- Treatment and filtration systems
- Managing water exchange in different systems
- Impact of water quality on fish health
- *Case Study: Water management in cage culture systems*

Module 8: Fish Health and Biosecurity

- Common diseases and pathogens
- Disease diagnosis and control
- Biosecurity protocols
- Vaccination and treatment options
- Managing stress and mortality
- *Case Study: Reducing disease outbreak through biosecurity in Kenya*

Module 9: Integrated Aquaculture Systems

- Aquaponics and aquasilviculture

- Fish-livestock integration
- Waste recycling and nutrient reuse
- Sustainable input management
- Enhancing system efficiency
- *Case Study: Integrated fish-rice farming in Vietnam*

Module 10: Climate-Resilient Aquaculture

- Climate change impacts on aquaculture
- Mitigation and adaptation strategies
- Species selection and diversification
- Risk assessment and disaster planning
- Sustainable farm infrastructure
- *Case Study: Resilient shrimp farming under changing climates*

Module 11: Value Chain Development

- Input supply systems
- Processing and packaging innovations
- Cold chain and storage
- Quality assurance and traceability
- Export readiness and certifications
- *Case Study: Fish value chain upgrading in Uganda*

Module 12: Marketing and Access to Markets

- Market analysis tools
- Branding and positioning of fish products
- E-commerce in aquaculture
- Partnerships and cooperatives
- Export market entry strategies
- *Case Study: Online marketing for tilapia in Kenya*

Module 13: Aquaculture Business Planning

- Business model development
- Financial planning and projections
- Access to credit and investment
- Managing operational costs
- Record keeping and evaluation
- *Case Study: Profitable small-scale aquaculture startup in Tanzania*

Module 14: Risk Management in Aquaculture

- Identifying and analyzing risks
- Risk mitigation techniques
- Insurance in aquaculture
- Contingency planning
- Legal and compliance issues
- *Case Study: Risk management in flood-prone aquafarms*

Module 15: Policy, Advocacy, and Future Trends

- National aquaculture policies and regulations
- International standards and frameworks
- Role of aquaculture in national development

- Advocacy for inclusive aquaculture
- Future of digital and genetic technologies
- *Case Study: Policy reforms improving aquaculture in Rwanda*

Training Methodology

- Interactive lectures and expert presentations
- Hands-on practical sessions and demonstrations
- Field visits and virtual tours of successful farms
- Group discussions and problem-solving workshops
- Real-time case study analysis and group projects
- Online tools and digital simulations

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:

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