Livestock Breeding Management Training Course

Professional Development Training Course Outline

Category	Veterinary and Animal Science	**Duration**	5 Days
Base Fee	$1,500 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

Livestock Breeding Management Training Course is designed to equip participants with cutting-edge expertise in genetic improvement, precision livestock farming, reproductive biotechnology, artificial insemination (AI), embryo transfer (ET), genomic selection, herd performance analytics, and sustainable animal production systems. With the rapid transformation of the global livestock sector through digital agriculture, smart farming technologies, climate-resilient breeding, and data-driven decision-making, this course delivers practical, science-based knowledge aligned with international standards set by organizations such as Food and Agriculture Organization and World Organisation for Animal Health. Participants gain hands-on exposure to advanced breeding strategies that enhance productivity, profitability, animal welfare, and biosecurity compliance.

Designed for the era of AgriTech innovation and sustainable livestock value chains, this training integrates genomic tools, performance recording systems, reproductive efficiency management, crossbreeding strategies, breeding value estimation (EBVs), artificial intelligence in herd management, and climate-smart livestock breeding practices. Through real-world case studies, farm simulations, and applied research insights, learners develop competencies in breeding program design, genetic resource conservation, disease-resistant breeding, carbon footprint reduction, and precision reproduction technologies empowering them to lead high-impact livestock enterprises in competitive global markets.

Programme Curriculum

Livestock Breeding Management Training Course

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Course Duration

5 days

Course Objectives

1. Master Genomic Selection and DNA-Based Breeding Technologies
2. Implement Precision Livestock Farming (PLF) Systems
3. Design Sustainable and Climate-Resilient Breeding Programs
4. Optimize Artificial Insemination (AI) and Embryo Transfer (ET) Protocols
5. Apply Breeding Value Estimation (EBVs) and Performance Analytics
6. Develop Crossbreeding and Hybrid Vigor Strategies
7. Integrate Big Data and AI-Driven Herd Management Tools
8. Strengthen Biosecurity and Disease-Resistant Genetic Selection
9. Improve Reproductive Efficiency and Fertility Management
10. Enhance Livestock Productivity and Profitability Models
11. Apply Animal Welfare-Centered Breeding Frameworks
12. Promote Genetic Resource Conservation and Biodiversity Protection
13. Build Market-Oriented, Value Chain-Integrated Livestock Enterprises

Target Audience

1. Livestock Farmers and Commercial Breeders
2. Veterinary Professionals and Animal Health Officers
3. Animal Scientists and Geneticists
4. Dairy and Meat Industry Managers
5. Agricultural Extension Officers
6. Agribusiness Entrepreneurs and Investors
7. Government Livestock Development Officers
8. Researchers and Graduate Students in Animal Production

Course Modules

Module 1: Principles of Livestock Genetics and Breeding

- Fundamentals of **Mendelian Genetics and Quantitative Traits**
- Heritability and Genetic Correlations
- Selection Methods (Mass, Family, Progeny Testing)
- Breeding Value Estimation (EBVs & BLUP Models)
- Case Study: Genetic Improvement in Dairy Herds using EBVs

Module 2: Reproductive Technologies and Biotechnology

- Artificial Insemination (AI) Best Practices
- Estrus Synchronization Protocols
- Embryo Transfer (ET) and IVF Applications
- Semen Quality Evaluation and Cryopreservation
- Case Study: AI-Based Genetic Expansion in Commercial Dairy Farms

Module 3: Genomic Selection and Molecular Tools

- DNA Markers and SNP Genotyping
- Genomic Breeding Values (GEBVs)
- Marker-Assisted Selection (MAS)
- Gene Editing and CRISPR Innovations
- Case Study: Genomic Selection in Beef Cattle Performance Enhancement

Module 4: Precision Livestock Farming & Digital Technologies

- Smart Sensors and Wearable Monitoring Devices
- AI-Based Heat Detection Systems
- Data-Driven Herd Analytics Platforms
- Livestock Management Software
- Case Study: Smart Dairy Farm using Automated Reproductive Monitoring

Module 5: Crossbreeding and Breed Improvement Strategies

- Hybrid Vigor (Heterosis) Optimization
- Terminal vs Rotational Crossbreeding Systems
- Indigenous Breed Conservation
- Climate-Adapted Breeding Approaches
- Case Study: Crossbreeding for Heat Tolerance and Milk Yield Improvement

Module 6: Herd Health, Biosecurity & Disease-Resistant Breeding

- Genetic Selection for Disease Resistance
- Biosecurity Risk Management Plans
- Vaccination and Preventive Herd Programs
- Zoonotic Disease Mitigation
- Case Study: Mastitis-Resistant Dairy Herd Breeding Program

Module 7: Sustainable and Climate-Smart Livestock Breeding

- Low-Emission Breeding Strategies
- Feed Efficiency Genetics
- Carbon Footprint Reduction in Herds
- Water and Resource Optimization

- Case Study: Climate-Resilient Small Ruminant Breeding Systems

Module 8: Breeding Program Design, Economics & Value Chain Integration

- Designing National and Farm-Level Breeding Programs
- Cost-Benefit Analysis of Genetic Investments
- Performance Recording Systems
- Market-Oriented Production Planning
- Case Study: Commercial Breeding Enterprise Profitability Model

Training Methodology

This course employs a participatory and hands-on approach to ensure practical learning, including:

- Interactive lectures and presentations.
- Group discussions and brainstorming sessions.
- Hands-on exercises using real-world datasets.
- Role-playing and scenario-based simulations.
- Analysis of case studies to bridge theory and practice.
- Peer-to-peer learning and networking.
- Expert-led Q&A sessions.
- Continuous feedback and personalized guidance.

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	27 Nov 2026	Online	$1,000
23 Nov 2026	27 Nov 2026	Physical	$1,500
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$4,500
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$6,000

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

Register Online Now

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