Animal Vaccine Development 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

Animal Vaccine Development Training Course is designed to equip professionals with advanced knowledge in veterinary immunology, vaccine research, biologics manufacturing, regulatory compliance, and translational vaccinology. With the rapid emergence of zoonotic diseases, antimicrobial resistance (AMR), One Health initiatives, and global biosecurity challenges, the demand for innovative and safe veterinary vaccines has never been greater. This program integrates cutting-edge biotechnology, molecular diagnostics, adjuvant systems, genomic vaccinology, and GMP-compliant production strategies to meet global animal health standards.

Participants will gain hands-on exposure to vaccine formulation technologies, preclinical evaluation models, quality control systems, regulatory submission pathways, and commercialization strategies aligned with international frameworks such as OIE/WOAH and global regulatory authorities. Through case-based learning, real-world industry simulations, and applied research methodologies, this course prepares professionals to lead in livestock health management, companion animal immunization, aquaculture vaccines, and emerging infectious disease control programs.

Programme Curriculum

Animal Vaccine Development Training Course

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5 days

Course Objectives

1. Understand veterinary immunology and host-pathogen interactions
2. Design and develop next-generation recombinant vaccines
3. Apply reverse vaccinology and genomic vaccine design
4. Conduct preclinical and clinical trial design for veterinary biologics
5. Implement Good Manufacturing Practices (GMP) in vaccine production
6. Develop expertise in adjuvant technologies and delivery systems
7. Perform vaccine safety, sterility, and potency testing
8. Navigate global regulatory compliance and dossier submission
9. Integrate One Health and zoonotic disease prevention strategies
10. Utilize molecular diagnostics and immunoassays (ELISA, PCR)
11. Optimize cold chain management and vaccine stability
12. Manage pharmacovigilance and post-marketing surveillance
13. Develop strategies for commercialization and global market access

Target Audience

1. Veterinary doctors and animal health practitioners
2. Biotechnology and life sciences graduates
3. Vaccine R&D scientists
4. Regulatory affairs professionals
5. Livestock and poultry health managers
6. Pharmaceutical manufacturing professionals
7. Research scholars (Immunology/Microbiology)
8. Government animal health officers

Course Modules

Module 1: Fundamentals of Veterinary Immunology

- Innate and adaptive immune responses
- Antigen processing and presentation
- Immunogenicity and correlates of protection
- Host-pathogen interaction models
- Immunological memory mechanisms

  Case Study: Immune response mapping in Foot-and-Mouth Disease (FMD)

Module 2: Vaccine Platforms & Technologies

- Live attenuated and inactivated vaccines
- Recombinant and subunit vaccines
- mRNA and viral vector vaccines
- DNA vaccines for livestock
- Nanoparticle-based delivery systems

  Case Study: Recombinant vaccine development for Newcastle Disease

Module 3: Antigen Discovery & Reverse Vaccinology

- Genomic and proteomic screening
- Epitope mapping and bioinformatics tools
- Antigen expression systems
- Structural vaccinology
- In-silico vaccine design

  Case Study: Reverse vaccinology approach in Brucellosis vaccine design

Module 4: Vaccine Formulation & Adjuvants

- Adjuvant selection and immune potentiators
- Stabilizers and preservatives
- Emulsion and liposome-based systems
- Controlled-release formulations
- Thermostable vaccine innovations

  Case Study: Oil-adjuvanted vaccines in Poultry Immunization

Module 5: Preclinical & Clinical Evaluation

- Animal challenge studies
- Safety and toxicity testing
- Dose optimization studies
- Field trials in livestock
- Statistical data interpretation

  Case Study: Field evaluation of Rabies vaccine in canine populations

Module 6: Manufacturing & GMP Compliance

- Bioreactor systems and scale-up
- Upstream and downstream processing
- Sterility and contamination control
- Quality assurance (QA/QC) systems
- Batch release protocols

  Case Study: GMP compliance audit in veterinary biologics facility

Module 7: Regulatory Affairs & Global Guidelines

- WOAH (OIE) vaccine standards
- Dossier preparation and submission
- Labeling and product registration
- Pharmacovigilance systems
- International trade compliance

  Case Study: Regulatory approval pathway for African Swine Fever vaccine

Module 8: Commercialization & Emerging Trends

- Vaccine market analysis
- Public-private partnerships
- Cold chain logistics optimization
- AI in vaccine research
- One Health integration strategies

  Case Study: Scaling livestock vaccination programs in developing countries

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:

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