Veterinary Microbiology & Immunology 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

Veterinary Microbiology & Immunology Training Course is designed to equip veterinary professionals, researchers, and students with advanced knowledge of pathogen biology, immune responses, and disease diagnostics in animals. This course emphasizes the integration of molecular techniques, serological assays, and cutting-edge diagnostic tools to identify and control infectious diseases. Participants will gain expertise in understanding zoonotic pathogens, antimicrobial resistance, and vaccine development, enabling them to make informed decisions in clinical, research, and field settings.

Through a combination of interactive lectures, hands-on laboratory sessions, and case-based discussions, this program ensures practical mastery of key concepts in bacterial, viral, and parasitic infections. Attendees will explore host-pathogen interactions, immunopathology, and epidemiology while developing skills in disease surveillance, outbreak investigation, and immunodiagnostics. By the end of the course, participants will be proficient in applying evidence-based veterinary microbiology and immunology practices, fostering enhanced animal health management and public health protection.

Programme Curriculum

Veterinary Microbiology & Immunology Training Course

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5 days

Course Objectives

1. Master veterinary pathogen identification techniques using modern molecular diagnostics.
2. Understand host immune response mechanisms in animals.
3. Analyze zoonotic disease transmission and prevention strategies.
4. Apply serological and immunoassay techniques for disease detection.
5. Investigate antimicrobial resistance trends in veterinary pathogens.
6. Develop skills in vaccine design and evaluation for livestock and companion animals.
7. Implement biosecurity and infection control measures in veterinary practice.
8. Conduct epidemiological studies for emerging infectious diseases.
9. Evaluate diagnostic tools and laboratory quality assurance in veterinary microbiology.
10. Explore molecular pathogen-host interaction pathways.
11. Integrate case-based learning for outbreak investigation.
12. Enhance laboratory biosafety and ethical practices in animal research.
13. Promote One Health approaches linking animal and public health.

Target Audience

1. Veterinary students pursuing advanced microbiology and immunology knowledge
2. Practicing veterinarians in clinical or diagnostic roles
3. Veterinary laboratory technicians and microbiologists
4. Researchers in veterinary infectious diseases
5. Animal health consultants and epidemiologists
6. Livestock and poultry health specialists
7. Veterinary public health professionals
8. Professionals involved in **zoonotic disease control and surveillance**

Course Modules

Module 1: Introduction to Veterinary Microbiology

- Overview of animal pathogens
- Pathogenesis and host specificity
- Basics of microbial culture and isolation techniques
- Antimicrobial susceptibility testing
- Case Study: Outbreak investigation of bovine respiratory disease

Module 2: Veterinary Immunology Fundamentals

- Structure and function of animal immune system
- Innate vs adaptive immunity
- Cytokine signaling and immunoregulation
- Immune responses to infection
- Case Study: Immunopathology of canine parvovirus infection

Module 3: Diagnostic Microbiology Techniques

- Microscopy, staining, and culture methods
- PCR and molecular diagnostic tools
- Serological assays (ELISA, Western blot)
- Rapid point-of-care diagnostics
- Case Study: Diagnosis of avian influenza outbreak

Module 4: Veterinary Virology

- Major viral pathogens in livestock and pets
- Viral replication and pathogenesis
- Vaccine development and antiviral strategies
- Molecular detection techniques
- Case Study: Foot-and-mouth disease surveillance in cattle

Module 5: Bacteriology and Antimicrobial Resistance

- Common bacterial infections in animals
- Mechanisms of antibiotic resistance
- Antimicrobial stewardship in veterinary practice
- Molecular characterization of bacterial strains
- Case Study: MRSA outbreak in companion animals

Module 6: Parasitology & Host-Parasite Interactions

- Protozoan and helminth infections
- Immune evasion by parasites
- Diagnostic parasitology techniques
- Treatment and prevention strategies
- Case Study: Coccidiosis control in poultry farms

Module 7: Emerging Infectious Diseases & Zoonoses

- Global trends in zoonotic diseases
- One Health approach for disease management
- Epidemiological surveillance techniques
- Risk assessment and outbreak preparedness
- Case Study: Nipah virus outbreak containment in pigs

Module 8: Practical Laboratory & Research Skills

- Hands-on microbiology and immunology experiments
- Laboratory biosafety and biosecurity
- Data analysis and interpretation
- Scientific writing and reporting

- Case Study: Investigating a multi-species outbreak using lab diagnostics

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
21 Sep 2026	25 Sep 2026	Online	$1,000
21 Sep 2026	25 Sep 2026	Physical	$1,500

Start Date	End Date	Location	Price
21 Sep 2026	25 Sep 2026	Physical	$0
21 Sep 2026	25 Sep 2026	Physical	$0
21 Sep 2026	25 Sep 2026	Physical	$0
21 Sep 2026	25 Sep 2026	Physical	$0
21 Sep 2026	25 Sep 2026	Physical	$0
21 Sep 2026	25 Sep 2026	Physical	$0

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

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