Farm Animal Health [1690]

COURSE OUTLINE

(1) GENERAL

SCHOOL	ANIMAL BIOSCIENCES		
ACADEMIC UNIT	DEPARTMENT OF ANIMAL SCIENCE		
LEVEL OF STUDIES	Undergraduate [Required]		
COURSE CODE	**1690**	**SEMESTER**	**9th**
COURSE TITLE	FARM ANIMAL HEALTH		

INDEPENDENT TEACHING ACTIVITIES	**WEEKLY TEACHING HOURS**	**CREDITS**
Lectures	3	
Laboratory exercises	3	
TOTAL	**6**	**5**

COURSE TYPE	Scientific area
PREREQUISITE COURSES:	
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	GREEK
IS THE COURSE OFFERED TO ERASMUS STUDENTS:	YES (in English)
COURSE WEBSITE (URL):	https://mediasrv.aua.gr/eclass/courses/EZPY141/
TEACHING STAFF:	Georgios Christodoulopoulos Athanasios Gelasakis

(2) LEARNING OUTCOMES

Learning outcomes

Hygiene has traditionally been defined as the biological science that studies the factors influencing the health and welfare of an individual or a population. It encompasses the conditions and practices that ensure animal health, promote welfare, and limit the spread of diseases within populations. In English-language literature, the equivalent term is “animal health”, while in contemporary contexts, the field is increasingly referred to as “animal health management.” In modern literature, the scope of farm animal hygiene is typically categorized into three main areas:

- Preventive veterinary medicine
- Public health
- Food safety

Upon successful completion of the course, students will be able to:

- Understand the significance of preventive medicine in maintaining the health and welfare of farm animals and its role in sustainable livestock production.
- Identify and evaluate the principal biological, environmental, and management factors that influence animal health.
- Apply the principles of preventive veterinary medicine in daily farm management practices.
- Relate farm animal hygiene to public health concerns and the safety of animal-derived food products.
- Design and implement biosecurity and health management programs in livestock operations.
- Analyze practical examples and case studies to prevent and control both infectious and non-infectious diseases.
- Collaborate in interdisciplinary contexts to promote the health of animals, humans, and the environment (One Health approach).

According to Bloom’s Taxonomy, students will be able to:

1. Knowledge / Recall
   - Define the concept of farm animal hygiene.
   - Enumerate the main factors affecting animal health and welfare.
2. Comprehension
   - Explain the interrelationship between hygiene, public health, and food safety.
   - Describe the fundamental principles of preventive veterinary medicine.
3. Application
   - Implement hygiene practices within livestock farms.
   - Apply biosecurity measures for the prevention of disease.
4. Analysis

- Examine cases of disease transmission within animal populations.
- Identify deficiencies in existing hygiene and health management programs.

5. Synthesis / Creation
   - Develop prevention and health management programs tailored to specific types of farms.
   - Formulate integrated hygiene strategies that simultaneously address animal, human, and environmental health (One Health approach).
6. Evaluation
   - Assess the effectiveness of hygiene and management measures at the farm level.
   - Evaluate the appropriateness of various disease prevention strategies based on specific farming conditions.

General Competences

- Investigate, analyse and compose data and information, using the appropriate technical means
- Autonomous work
- Decision making
- Team work
- Promote free, creative, and conductive thinking

(3) SYLLABUS

LECTURING

1. Subject and Significance of Farm Animal Hygiene
   - Definition and historical development of the discipline.
   - Relationship with public health, food safety, and sustainable livestock production.
   - Role in disease prevention, animal welfare, and reduction of economic losses.
2. Basic Epidemiological Terms and Concepts
   - Key terminology and tools of epidemiology.
   - Concepts: prevalence, incidence, morbidity, mortality, risk factors.
   - Applications in studying, preventing, and controlling diseases in farm animals.
3. Hygiene of Livestock Facilities and Environment
   - Principles of design and management of stables and barns.
   - Factors: ventilation, lighting, temperature, humidity, cleanliness, disinfection.
   - Biosecurity measures to reduce the risk of disease introduction and spread.
4. Diseases Related to Nutritional Errors, Omissions, or Accidents
   - Feeding errors: foreign object ingestion, incorrect feed composition or dosage, gastrointestinal anomalies, fiber imbalance.
   - Metabolic diseases associated with nutrition.
5. Diseases from Deficiency or Excess of Vitamins and Trace Elements
   - Clinical manifestations and effects on health, reproduction, and productivity.
   - Diagnosis and prevention strategies.
   - Balanced and supplementary nutrition approaches.
6. Mycotoxicoses
   - Major mycotoxins and pathogenesis.
   - Clinical signs, diagnosis, and management.
   - Preventive measures in feed collection, storage, and administration.
   - Public health considerations.
7. Endemic Diseases and Pathological Conditions in Industrial Farms
   - Epidemiology and factors sustaining the disease.
   - Control and eradication strategies.
   - Examples: acute and subacute ruminal acidosis, periodontal disease, clinical and subclinical ketosis, hypocalcemic paralysis.
8. Management of Diarrheal Syndromes
   - Infectious and non-infectious causes, mechanisms, and pathogenesis.
   - Herd-level intervention planning.
   - Preventive practices in hygiene, nutrition, and biosecurity.
9. Types of Pneumonia and Their Management
   - Classification and etiology: infectious, environmental, metabolic.
   - Pathophysiology, clinical diagnosis, and treatment.
   - Prevention and management in intensive and high-density systems.

PRACTICAL

- Principles of Laboratory Testing: Techniques and procedures for sample analysis and evaluation.
- Principles of Sampling and Sample Transport: Correct collection, preservation, and transport of samples.
- Methods of Anesthesia and Slaughter: Theoretical and practical approaches according to animal welfare standards and legislation.
- Assessment of Livestock Housing Conditions: Evaluation of ventilation, cleanliness, bedding, welfare, and biosecurity.
- Basic Principles of Milking Hygiene: Equipment, cleaning techniques, animal preparation, and mastitis prevention.
- Clinical Examination of Farm Animals: Examination protocols focusing on common diseases.

• Principles of Hoof Care: Techniques for prevention and management of hoof disorders.
• Methods for Sampling Rumen Contents in Ruminants: Diagnostic and research sampling techniques.
• Administration of Injections in Farm Animals: Intravenous, intramuscular, and subcutaneous techniques.

(4) TEACHING and LEARNING METHODS - EVALUATION

DELIVERY	Face-to-face
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY	- Internet (bibliography, visual materials) - E-learning platform: http://zp.aua.gr/el/content/eA/virtual - Communication via email - Support of the learning process through the e-class electronic platform
TEACHING METHODS	

Activity	***Semester workload***
Lectures	39
Practical training	36
Research essay	50
Course total (25 h of workload per ECTS)	***125***

STUDENT PERFORMANCE EVALUATION

Language of Evaluation
- Greek, or English for Erasmus students.

Examination Components
- Written Final Exam: Covers the theoretical part of the course.
- Oral Exam: Covers the content of the practical exercises.

Bonus System
- Applied to the written exam grade based on the performance during lectures and practical sessions and the grades from voluntary assignments
- Criteria for the bonus system and overall evaluation are explained at the beginning of the course and are continuously available via the E-class platform.

Special Note for Erasmus Students
- Evaluation will be conducted through written examinations only.

(5) ATTACHED BIBLIOGRAPHY

- Suggested bibliography:

A.M. Zafraka. Hygiene and Basics of Farm Animal Medicine. 2016, Kyriakidis Publications IKE.
The Merck Veterinary Manual

- Related academic journals:

The Veterinary Journal
Veterinary Record
Veterinary Record Case Reports
Veterinary Research Communications
Journal of the Hellenic Veterinary Medical Society