

VETERINARY HYGIENE AND ENVIRONMENT PROTECTION

STRUCTURE

Study program	<i>Veterinary Medicine – English Program</i>
Year of study	3 rd : 2025-2026
Semester	5 th
Type of discipline	mandatory specialty-specific subject
Total number of hours / week	Course - 2 hours; PW - 3 hours
Total number of hours according to curriculum	Course - 28 hours; PW - 42 hours
ECTS	4 credit points

DISCIPLINE OBJECTIVES

Acquisition of knowledge and training of analytical and decision-making skills regarding the hygiene of animal houses, environmental factors, veterinary sanitation; explanation of the necessity for environmental protection. At the end of the course, the student: knows the relationships between animals and environmental factors; the organization of barns and their facilities; microclimate factors; the elements of scientific-based nutrition and grazing; of watering; body hygiene; veterinary sanitation measures in farms and food processing premises; summarizes and applies methods and means of reducing pollutant emissions from livestock rearing units and the procedures for environment protection; as well as environmental legislation.

DISCIPLINE CONTENT

COURSE	No. of hours
Introduction (the purpose of the study, definition, etymology, hygiene field; the purpose and the importance of hygiene and environmental protection; the relations between the preventive medicine and the veterinary hygiene and the environmental protection; Veterinary hygiene– the cornerstone of the animal welfare; short history and the study methods used in veterinary hygiene)	1
Chapter II - Normative acts: general aspects, legislation which regulate the veterinary hygiene and the environmental protection (environmental legislation; the place and purpose of veterinary medicine in environmental protection in Romania)	0.5
Chapter III - Air hygiene (atmosphere and its physical structure; the hygienic importance of air; atmospheric air composition and its influence on animals; physical properties of the atmospheric air and the influence on animals; complex meteorological factors and the influence on animals; animals' acclimatization; air pollution)	5.5
Chapter IV - Soil hygiene (definition, purpose and importance of the soil hygiene; chemical composition of soil; physical properties of the soil; living components of the soil; soil pollution)	2
Chapter V - Water hygiene (general facts; water in nature; world and national reserves of fresh water; water sources and their hygienic characteristics; water sources' pollution; introducing the maximum admitted concentration; surface waters classification on the basis of pollution and self-purification level; drinking water - quality standards; sanitary monitoring of water quality; sanitary research of the water from supply sources and of the efficiency of the drinking or wastewaters treatment plants; measures for preventing water resources pollution; water resources protection)	2
Chapter VI - Hygiene of animal housing (housing as animal welfare and protection objective indicators; advantages and disadvantages of housing; requirements for farm sites; livestock unit's systematization; hygienic requirements regarding building materials; the relations between the building materials and the microclimate factors, the rearing conditions and the animal health; hygienic requirements regarding elements of the shelters; animal houses' architecture and classification; elements of house inner division; the functional and sanitary veterinary functional units in the animal houses; equipment and systems which assure house functionality: light; ventilation; air conditioning, watering; feeding; collection and disposal of manure and purine, tether systems; animal house microclimate: physical, chemical and biological factors; Optimal microclimate: global assessment of the microclimate, control of the microclimate conditions in animal houses)	8
Chapter VII - Hygiene of feeding and grazing	1
Chapter VIII - Hygiene of animal watering (the water requirements in the livestock's units; water supply in the livestock's units; biological water consumption; animal watering technique; the consequences of unhygienic watering from quantitative and qualitative point of view)	1
Chapter IX - Animals body hygiene: cleaning, hair clipping, shearing, bathing, maintaining the good hooves' hygiene	1

Chapter X - General hygiene measures for the prevention and control of animal disease and for prevention of diseases transmissible from animals to humans (general considerations; regulation for animals and vehicles circulation; corpses delivery; sick animals' isolation and emergency slaughter; HACCP strategy in the animal farm biosecurity; disinfection; insect control; rat control; measure of personnel protection in disinfection, insect and rat control actions; valorification, neutralization and destruction of corpses and slaughter waste products. Inactivation of corpses and other organic materials of animal origin through utilization: processing, composting, lactic fermentation, using in carnivorous and pet animals feeding; veterinary sanitation programs in farms; animal manure management; the pollutant potential; manure management concept; human society and the manure management problem; the report on manure management in the Romanian legislation; the contradiction of interests on manure management in modern society; acts which regulate the manure problems in UE and USA; manure application; the perspectives on manure management; inactivation of purine; inactivation of straw, pasty, semi-liquid and liquid manure; inactivation of wastewater: mechanical, biological and chemical treatment; measures to reduce dust and microorganisms' emissions in livestock units, measures to reduce emissions of toxic gases and non-toxic sewer gases from livestock units)	6
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PRACTICAL WORKS PW	No. of hours
Chapter I - Air hygiene. Physical air properties: air temperature, atmospheric humidity, temperature and humidity diagrams interpretation, pressure, precipitation, atmospheric nebulosity, air movement - wind, air draughts, sun radiation, noises, air ions); Chemical air properties (Air sampling; Assessing CO ₂ , NH ₃ and H ₂ S air concentrations); Biological air properties (air dust/particulates - quantitative examination, qualitative examination; air microflora - quantitative and qualitative examination, results interpretation) / <i>Practical topics evaluation 1</i>	24
Chapter II - Soil hygiene (Sampling, identification and transport of soil; determination of soil physical, chemical and biological properties: bacteriological and parasitological examinations; interpreting the results for soil lab analyses)	3
Chapter III - Water hygiene (sampling, identification, preserving and transporting water; water sources classification; types of water samples; drinking water - quality parameters: determining the sensory and physical properties of water, determining the chemical properties of water, determining the bacteriological and biological properties of water; water radioactivity standards; spectrophotometric water chemical analysis, results interpretation)	6
Chapter IV - Fodder hygiene (sampling; fodder hygiene assessment)	3
Chapter V - Veterinary sanitation measures (disinfection; disinfection methods - disinfectants chemical groups; appliance, devices for disinfection, dilution preparing; disinfection efficiency control; Insect control - classification, methods, efficiency control; rat control - classification, methods, efficiency control) / <i>Practical topics evaluation 2</i>	6

REFERENCES

1. Furnaris, F. - Lectures' and practical topics' handouts 2025-2026 (academic.usamv.ro)
2. Aland, A., Banhazi, T. - Livestock housing: modern management to ensure optimal health and welfare of farm animals, Wageningen Academic Publishers, 2013, ISBN: 978-90-8686-217-7
3. Hill, P. - Environmental protection: What everyone needs to know, Oxford university Press, 2017; ISBN 780190223069

EVALUATION

Type of activity	Evaluation criteria	Method of evaluation	Percentage of final grade %
Course	Acquiring theoretical notions on environmental/microclimate factors; defining and practicing the methodology of analysis and of interpreting the quality of natural environment and microclimate factors; evaluation of the systems and installations operating in animals' houses; conceptualization of shelter construction projects, technological flows in farms and biosecurity Course attendance/ Presenting a scientific review	Written exam (50 multiple-choice questions with one correct answer among 5 possible options), each correct answer being scored with 0.18 points	70%
PW	Laboratory tests (practical topics evaluations): passing the tests (getting the minimum grade of 5) is a mandatory condition for participation in the theoretical, final exam	test1 includes 10 subjects (open questions, problems, multiple choice questions), test2 includes 8 subjects (multiple choice questions, one correct answer)	30%
Other activities	The minimum grade for passing the exam is 5 and it aims: acquisition of the theoretical notions of veterinary hygiene, veterinary health, the principles of biosecurity, environment protection, systems and installations operating inside the animals' shelters; demonstration of competences and of practical skills related to the analysis and interpretation of the quality of natural environmental and microclimate factors; control of the sanitation actions' efficiency and farm flows. Certification of the acquisition of competences by filling in and signing the student's logbook by the student and the teacher.		

Course teaching staff: Assoc. Prof. Furnaris Ciprian Florin, D.V.M. PhD

Practical work teaching staff (PW): Assoc. Prof. Furnaris Ciprian Florin, D.V.M. PhD