SYLLABUS OF THE EDUCATIONAL COMPONENT

VETERINARY HYGIENE, SANITATION AND ANIMAL WELFARE

Specialty	**211 – Veterinary Medicine**	**Course commitment**	**Mandatory**
Educational Program	**Veterinary Medicine**	**Faculty**	**Faculty of Veterinary Medicine**
Education Level	**Master's Degree in Veterinary Medicine**	**Department**	**Department of Sanitation, Hygiene, and Forensic Veterinary Medicine**

Lecturer

Alla Mykolaivna Petrenko

Higher education Specialty of Veterinary Medicine
Degree - Candidate of Veterinary Sciences 16.00.06 Animal Hygiene and Veterinary Sanitation
Academic Status - Associate Professor of the Department of Sanitation, Hygiene and Forensic Veterinary Medicine
Work Experience - 20 years
Professional Activity Indicators Related to the Course:

- Author of more than 3 methodological developments;
- Co-author of publications included in the Web of Science scientometric database;
- Co-author of 2 thematic publications listed in Ukraine's professional editions;
- Participant in scientific and methodological conferences.

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INFORMATION ABOUT THE EDUCATIONAL COMPONENT

Objective	**Develop competencies in mastering and applying measures aimed at providing animals and poultry with high-quality water, feed, and optimal technological conditions for care and maintenance. The course also focuses on ensuring reliable veterinary and sanitary protection, preventing the introduction of infectious agents, and protecting the environment from livestock waste contamination.**
Format	**Lectures, practical sessions, independent work, individual assignments and team projects.**
Detailing of learning outcomes and Assessment Forms	• **Understanding the importance of hygiene recommendations, requirements, norms, and rules (GC2, GC7, GC9, SC10, SC13, PLO7) / Simulation team project 1** • **Ability to use regulatory documents (GC2, GC7, SC16, PLO17) / Individual practical assignments** • **Compliance with Ukrainian legislation on veterinary medicine and animal protection, as well as EU regulations on the Five Freedoms principle. Ensure the most up-to-date requirements based on scientific developments by domestic and foreign researchers. (GC2, GC3, SC2, PLO17) / Training, team project 2** • **Ability to protect the environment from livestock waste and veterinary materials (GC3, GC7, GC9, GC12, SC10-12, SC16, PLO7) / Training, team project 2**
Credits and Assessment	**6 ECTS credits (180 hours): 32 hours of lectures, 66 hours of laboratory and practical activities, current control (4 chapters), final assessment - differentiated credit**
Lecturer Requirements	**Timely completion of assignments, active participation, teamwork**
Enrollment Requirements	**Mandatory enrollment**

COMPLIANCE WITH THE EDUCATION STANDARD AND EDUCATIONAL PROGRAM

Competencies (GC)	**GC2** Ability to apply knowledge and make informed decisions regarding hygiene research of various age and gender groups of animals and poultry; **GC3** Ability to select the object and methods of hygienic research, conduct studies, analyze, summarize and compare the obtained results with literature data; **GC7** Ability to conduct research at an appropriate level, apply achievements of veterinary medicine (hygiene and sanitation), and suggest improvement for its further development; **GC9** Ability to make informed decisions regarding hygiene research under normal and pathological conditions. Ability to ensure high-quality implementation of hygienic research in animal husbandry; **GC12** Ability to organize sanitary-hygienic measures at livestock facilities to prevent environmental pollution **SC2.** Ability to use tools, special devices, instruments, laboratory equipment and other technical means to perform the necessary manipulations during professional activities. **SC3.** Ability to comply with the rules of labor protection, asepsis and antiseptics during professional activities. **SC 10.** Ability to develop strategies for safe, sanitary animal husbandry.	**Program Learning Outcomes (PLO)**	**PLO7** Formulate conclusions on the effectiveness of selected methods and means of animal care, feeding, and treatment, as well as the prevention of infectious and non-infectious diseases, along with production and technological processes at enterprises involved in the housing, breeding, or exploitation of animals of various classes and species; **PLO17** Knowledge of biosafety, bioethics, and animal welfare rules and requirements.

	SC 11. Ability to apply knowledge of biosafety, bioethics and animal welfare in professional activities. **SC 12.** Ability to develop and implement measures aimed at protecting the population from diseases common to animals and humans. **SC 13.** Ability to develop strategies for the prevention of diseases of various etiologies. **SC16.** Ability to protect the environment from pollution by livestock waste, as well as materials and veterinary products.				

STRUCTURE OF THE EDUCATIONAL COMPONENT

Chapter 1. Methods of Sanitary-Hygienic Assessment and Veterinary Control of the Microclimate in Livestock Premises.					
Lecture 1.	Introduction to the course. Features of the influence of the physical properties of air on animals.	**LPA 1**	Sanitary and hygienic assessment of temperature and atmospheric pressure	**Independent work**	Sanitary and hygienic assessment of the dust content in the air of livestock premises (barn, pigsty, stable, sheep, poultry house).. Sanitary and hygienic control of the concentration of ions in the air of livestock premises (barn, pigsty, stable, shepherd, poultry house).. Sanitary and hygienic assessment of the intensity of the electromagnetic field in livestock premises (barn, pigsty, stable, shepherd, poultry house).. Sanitary and hygienic assessment of the intensity of noise in livestock premises (barn, pigsty, stable, sheep, poultry house).. Sanitary hygienic assessment of bacterial contamination of the air of livestock premises (barn, pigsty, stable, shepherd, poultry house).
Lecture 2.	Effects of radiant energy and illumination on the body and productivity of farm animals.	**LPA 2**	Sanitary and hygienic assessment of humidity and hygrometric indicators.		
Lecture 3.	Sanitary and hygienic assessment of the influence of the gas composition of the air environment on the animal body and its hygienic value.	**LPA 3**	Sanitary and hygienic assessment of air velocity.		
		LPA 4	Sanitary and hygienic assessment of natural illumination.		
		LPA 5	Sanitary and hygienic assessment of artificial lighting.		
		LPA 6	Sanitary and hygienic assessment of the carbon dioxide content in the room air.		
		LPA 7	Sanitary and hygienic assessment of ammonia content in the room air.		
		LPA 8	Sanitary and hygienic assessment of hydrogen sulfide content in the room air.		
Chapter 2. Sanitary-Hygienic Control of Feed and Soil.					
Lecture 4.	Sanitary and hygienic requirements for feed and feeding of farm animals.	**LPA 9**	Sanitary and hygienic assessment of the quality of coarse feed.	**Independent work**	Prevention of animal diseases caused by the use of feed affected by bacteria. Prevention of animal diseases caused by feed containing toxic substances. Prevention of animal diseases caused by poisonous plants. Prevention of diseases caused by soil infections.
Lecture 5.	Prevention of animal diseases caused by feed.	**LPA 10**	Sanitary and hygienic assessment of the quality of grain and concentrated feed.		
Lecture 6.	Sanitary and hygienic value of the soil.	**LPA 11**	Sanitary and hygienic assessment of the quality of green and juicy feed.		
Lecture 7	Sanitary and hygienic value of self-cleaning of soil.	**LPA 12**	Hygienic control of soil condition by physical properties.		

		LPA 13	Hygienic monitoring of soil condition by water properties.		
		LPA 14	Hygienic monitoring of soil condition by chemical indicators.		
		LPA 15	**Final test.**		
Chapter 3. Sanitary-Hygienic Assessment of Water.					
Lecture 8.	Sanitary and hygienic requirements for drinking water according to DerzhSanPin2.2.4.-171-10.	**LPA 16**	Sanitary and topographic survey of water supply sources (certification of water sources). Determination of the physical properties of water.		Express methods for general assessment of water pollution with organic substances. Sanitary and hygienic value and procedure for determining the hardness of water for watering animals Veterinary and sanitary rules for the use of wastewater.
Lecture 9.	Impact of drinking water quality on animal productivity and health.	**LPA 17**	Determination of the reaction and oxidability of water.		
		LPA 18	Hygienic assessment of water for ammonia and nitrite content.		
		LPA 19	Hygienic assessment of water for nitrate and chloride content.		
		LPA 20	Sanitary and hygienic assessment of water purification and disinfection methods.		
Chapter 4. Veterinary-Sanitary Requirements for Livestock Facility Design, Construction, and Operation.					
Lecture 10	General sanitary and hygienic requirements for the design, construction and operation of livestock premises.	**LPA 21**	General sanitary and hygienic requirements and regulations for farm design.		Hygienic requirements for transporting animals. Prevention of transport stress Hygienic requirements and methods of skin care and its derivatives in farm animals. Prevention of diseases of large and small cattle associated with conditions of detention Hygienic importance of prevention of swine diseases associated with conditions of detention Prevention of cold stress in sucking piglets Hygienic importance of prevention of diseases of poultry associated with conditions of detention Hygienic value of prevention of diseases of horses associated with conditions of detention Sanitary and hygienic value of motion for different species of animals. Sanitary and hygienic value of animal hardness.
Lecture 11	Animal welfare.	**LPA 22**	Sanitary and hygienic assessment of the technological documentation of the standard project.		
Lecture 12	Welfare of large and small cattle.	**LPA 23**	Calculation and evaluation of room ventilation by carbon dioxide content.		
Lecture 13	Pig welfare.	**LPA 24**	Calculation and evaluation of room ventilation by moisture content.		
Lecture 14	Welfare of farmed poultry.	**LPA 25-26**	Calculation and assessment of the heat balance of the room.		
Lecture 15	Horse welfare.	**LPA 27**	Calculation of natural and artificial illumination of livestock premises.		
Lecture 16	Hygiene of animals in the summer-pasture period.	**LPA 28**	Calculation of the output of manure.		
		LPA 29	Sanitary and hygienic assessment of conditions of keeping cattle and small cattle.		
		LPA 30	Sanitary and hygienic assessment of pig conditions.		

		LPA 31	Sanitary and hygienic assessment of the conditions of horses.		
		LPA 32	Sanitary and hygienic assessment of poultry conditions.		
		LPA 33	Exam		

CORE LITERATURE AND METHODOLOGICAL MATERIALS

Література

1. Departmental norms of technological design: Cattle-breeding enterprises: VNTP-APK-01-05/Ministry of Agriculture of Ukraine. - K.: Noosphere, 2006. - 60 p.
2. Departmental norms of technological design: Poultry enterprises: VNTP-APK-04-05/Ministry of Agriculture of Ukraine. - K.: Noosphere, 2005. - 68 p.
3. Departmental norms of technological design: Pig-breeding enterprises: VNTP-APK-02-05/Ministry of Agriculture of Ukraine. - K.: Noosphere, 2005. -45 p.
4. Departmental norms of technological design: Konyar enterprises: VNTP-APK-06-07, Ministry of Agrarian Policy of Ukraine, K.: - 2006.- 55 p.

Departmental norms of technological design: Sheep and goat enterprises: VNTP-APK-03-05. Ministry of Agriculture of Ukraine. - K.: Noosphere, 2005.-87p.

Animal Hygiene/ M.V. Demchuk, M.V. Chornyi, M.P. Zakharenko M.O. Vysokos, – Kharkiv.: Espada, 2006. – 520 p.

Animal hygiene and veterinary sanitation: textbook/ A. O. Bondar, M. M. Poruchnyk, L. O. Tarasenko, V. O. Rud; za red. A. O. Bondar. – Mykolaiv: MNAU, 2018. – 179 p.

General veterinary prevention/ M.V. Demchuk, O.V. Kozenko, O.H. Bohachyk, I.V. Dvyliuk, V.V. Voroniak. – Lviv, SPOLOM, 2012. – 360 p.

Animal maintenance systems: teaching staff/ compiled by M. O. Zakharenko, V. M. Poliakovskyi, L. V. Shevchenko [ta in.]. K. : Center for Educational Literature, 2016. 424 p.

Матеріально-технічне забезпечення

1. Tables. Multimedia support.
2. Folders with illustrative and demonstration material.
3. Slide presentations.
4. Methodological guidelines for laboratory classes in the discipline "Animal Hygiene." Regulatory requirements for the microclimate of premises for the maintenance of farm animals and their energy-saving justification. Approved by the Ministry of Agrarian Policy and Food of Ukraine / M. O. Zakharenko, L. V. Shevchenko, L. V. Polovyi [ta in.]. – K. – Vinnytsia : VD «Edelveis i K», 2011. – 64 p.
5. Workshop for laboratory and practical classes on animal hygiene./ M.P. Vysokos, M.V. Chornyi, M.O. Zakharenko. Kharkiv: Espada,2003.-218 p.

ASSESSMENT SYSTEM

SYSTEM		POINTS	ACTIVITY THAT IS ASSESSED
Final Assessment	**100 point ECTS scale**	**Up to 50 points**	**Average score of chapters assessments**
		Up to 50 points	**Final test**

Rating of section	**100 points total**	**Up to 50 points**	**Test responses**
		Up to 20 points	**Oral responses in practical sessions**
		Up to 30 points	**Independent work**

ACADEMIC INTEGRITY AND ETHICS

All participants in the educational process (including students) must adhere to the Code of Academic Integrity and the requirements outlined in the Regulations on Academic Integrity of DBTU**. They should demonstrate discipline, politeness, respect for each other's dignity, goodwill, honesty, and responsibility.**