

**MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE
SUMY NATIONAL AGRARIAN UNIVERSITY**

**Epizootiology and Parasitology Department
Faculty of Veterinary Medicine**

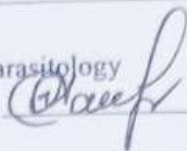
**SYLLABUS
of educational component**

**Veterinary Epidemiology
Ветеринарна епідеміологія
(optional)**

Specialization	211 Veterinary Medicine
Academic Program	Veterinary Medicine
level of higher education	second (master's)

Author: _____

Halyna Rebenko, Phd, Associate professor of Epizootiology and Parasitology Department

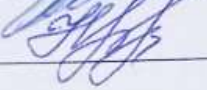
Module syllabus agreed at the Department meeting	Minutes No 15 dated 15.06.2026
	Head of Epizootiology and Parasitology Department  Oksana KASIANENKO

Approved by:

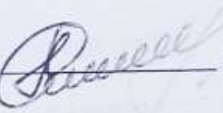
Guarantor of the Academic program

 Oleksandr CHEKAN

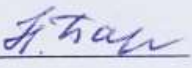
Dean of the Faculty

 Liudmyla NAHORNA

Syllabus review (attached) is provided by :

 Rimma DOLBANOSOVA

Methodologist of the Department of Educational Quality, licensing and accreditation

 Nadia BARANIK

Registered in electronic data base

18.06. 2026

Syllabus review data:

The academic year in which changes are made	The Academic program attachment number with changes description	Changes revised and approved		
		Minutes No and date of the department meeting	Head of Department	Guarantor of the Academic program
2027-2028				

1. MODULE OVERVIEW

1.	Title	Veterinary Epidemiology		
2.	Type (compulsory or optional)	optional		
3.	Program(s) to which module is attached	"Veterinary Medicine"		
4.	Faculty/Department	Faculty of Veterinary Medicine, Epizootiology and Parasitology department		
5.	Level of the National Qualifications Framework	7-th		
6.	Semester of module	6 semester		
7.	Total workload and time allotment	5 ECTS (150 hours)		
		Directed study		Self-directed study
		Lectures	Practicals	
			Labs	
			46	104
9.	Language of instruction	English		
10.	Module leader	Halyna Rebenko, Phd, Associate professor		
	Module leader contact information	rebenkogi@ukr.net +380958895465		
11.	Module description	Epidemiology is the study of factors affecting the health and illness of populations, and serves as the foundation and logic of interventions made in the interest of veterinary public health and preventive medicine.		
12.	Module aim	The main task of epidemiology is to describe patterns of disease occurrence, or more generally, to describe the distribution of a health related variable in a certain population of interest.		
13.	Module Dependencies (prerequisites, co-requisites, incompatible modules)	The educational component is based on the following: Veterinary microbiology and immunology, Veterinary virology, Veterinary hygiene and sanitation, Pathological physiology, Pathological anatomy.		
14.	The policy of academic integrity	All tasks related to calculations, planning and accounting documentation will have individual initial data. For violation of academic integrity, students may be held subject to the following academic liability: <i>Academic plagiarism</i> - grade 0, re-completion of the task. <i>Academic fraud</i> (copying, deception, publishing someone's work for their own) - cancellation of points; re-assessment evaluation re-execution of non-independently performed work with new source data; <i>The use of electronic devices</i> during the final control of knowledge - removal from work, grade 0, re-passing the final control.		
15.	Keywords	Prevalence, incidence, mortality, lethality Cohort, case-control and cross-sectional studies.		
16.	Link in Moodle	https://cdn.snau.edu.ua/moodle/course/view.php?id=5098		

2. LEARNING OUTCOMES BY EDUCATIONAL COMPONENT AND THEIR RELATIONSHIP WITH PROGRAM LEARNING OUTCOMES

Learning outcomes for OK: After studying the educational component, the student is expected to be able to...	Professional competencies that the OK aims to achieve		How is the DRN assessed?
	Ability to organize, conduct and analyze laboratory and special diagnostic tests	Ability to develop prevention strategies	
DRN 1. Identify the type of epidemic process, sources of infectious agents, determine the factors and mechanisms of their transmission	+		Case study and situation analysis
DRN 2. Recognize the risks of infectious diseases and make a forecast.	+	+	Group assignments with self- and peer assessment.
DRN 3. Calculate epidemiological indicators and visualize information	+		Calculation and graphic tasks, presentations.
DRN 4. Find up-to-date information on infectious diseases, their prevention, control, including rapid response mechanisms, strategies for carrying out preventive and health measures in accordance with international and domestic standards		+	Presentation evaluation, Analysis of scientific articles on the topic (according to individual tasks)

3. CONTENT OF THE EDUCATIONAL COMPONENT (COURSE PROGRAM)

Topic. List of issues to be addressed within the topic	Distribution within the overall time budget				Recommended reading
	Classroom work			Self-work	
	Lec	pract	Lab.		
Topic 1. Introduction. Definition of veterinary epidemiology. History. Types of epidemiological studies. Components of epidemiology.			2	4	1, 2
Topic 2 Cause-and-effect relationships, evidence-based medicine. Causality. Hypothesis testing. Types of relationships between phenomena and methods for establishing them.			2	6	1, 2
Topic 3 Description of disease manifestations. Population types. Geographical distribution.			2	4	1, 2, 3
Topic 4 Prevalence, incidence, mortality, lethality, survival. Calculation of indicators.			2	4	1, 2, 3
Topic 5. Characteristics of the host animal (genotype, age, sex, species, breed, behavior), characteristics of the pathogen (virulence, pathogenicity, infection gradient, consequences of infection, microbial colonization of the animal), characteristics of the external environment (geography, climate, management, stress).			2	4	1, 2, 3
Topic 6. Transmission of infection and ecology of the disease. Horizontal, vertical, transmissible, factors supporting the epizootic process, transboundary diseases. Spread of infections in populations and its regulation in the ecosystem.			2	4	1, 2, 3, 5
Topic 7. Natural foci of diseases, landscape epidemiology.			2	6	1, 2, 3
Topic 8. Disease pattern. Epidemic curves. Kendall's threshold theorem.			2	4	1, 2
Topic 9. Reproductive number. Trends in the spread of diseases. Types of biological models.			2	6	1, 2

Topic 10. Comparative studies and their applications.			2	4	1, 2
Topic 11. Collection and processing of epidemiological data. Data classification. Measurement levels. Accuracy, reliability, validity of data. Data quality control. Databases.			2	6	1, 2
Topic 12. Analysis and presentation of numerical indicators. Descriptive indicators. Descriptive statistics, statistical distribution of data, confidence intervals.			2	4	1, 2, 3, 4
Topic 13. Visualization of quantitative and qualitative indicators.			2	6	1, 2, 3
Topic 14. Prevalence assessment, establishing the presence of a disease in a population. Confirmation of the relationship between the disease and a hypothetical factor.			2	4	1, 2, 3
Topic 15. Principles of selection of diagnostic tests. Calculation of sample size.			2	6	1, 2
Topic 16. Statistical evaluation methods. Epidemiological calculators.			2	6	1, 2
Topic 17. Economics of surveillance measures.			2	4	1, 2
Topic 18. Descriptive and analytical epidemiology. Observational studies. Cohort, case-control and cross-sectional studies.			2	6	1, 2, 3
Topic 19. Organization of epidemiological studies.			2	4	1, 2, 3
Topic 20. Epidemiological surveillance. Purpose and types of surveillance. Data sources, surveillance mechanisms.			2	6	1, 2
Topic 21. Risk analysis. The concept of risk. Components of risk analysis: threat identification, risk assessment, risk management and communication. Qualitative and quantitative risk assessment.			2	6	1, 2, 5
Topic 22. Final lesson.			2		
Total			46	104	

4. TEACHING AND LEARNING METHODS

DRN	Teaching methods (work that will be carried out by the teacher <u>during classroom lessons</u> , consultations)	Teaching methods (what types of learning activities should the student perform <u>independently</u>)
DRN 1. Identify the type of epidemic process, sources of infectious agents, determine the factors and mechanisms of their transmission	Consideration of situations with a description of the factors and circumstances of the disease. Analysis of possible routes of introduction and spread of the pathogen	Studying the signs of diseases, their routes of isolation and infection, mode of transmission, seasonality, etc.
DRN 2. Recognize the risks of infectious diseases and make a forecast.	Explanation of possible situations with the introduction of pathogens of infectious diseases of pigs. Case studies with an emphasis on preventive measures and measures to eliminate zoonoses.	Study the main contagious diseases (especially zoonotic ones): signs of their presence in animals, possible routes of infection of humans and transmission factors, as well as possible consequences in the event of their occurrence/introduction.
DRN 3. Calculate epidemiological indicators and visualize information	Demonstration of methods of statistical processing of epidemiological indicators, as well as graphs and charts that allow visualization of information.	Analytical analysis of visual materials. Carrying out calculations and constructing diagrams according to the task. Public presentation of completed tasks
DRN 4. Find up-to-date information on infectious diseases, their prevention, control, including rapid response mechanisms, strategies for carrying out preventive and health	Familiarity with the main official sources of information on infectious animal diseases, especially those that require a rapid response, as they are extremely dangerous and are subject to notification	Practice skills in obtaining up-to-date information about infectious diseases and the current epizootic situation by completing tasks.

measures in accordance with international and domestic standards		
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5. EVALUATION BY EDUCATIONAL COMPONENT

5.1. Diagnostic assessment

5.2. Summative assessment

5.2.1. To assess the expected learning outcomes, there are

No.	Summative assessment methods	Points / Weight in the overall score	Date of compilation
6th semester			
1.	Assessment of the ability to calculate epidemiological indicators and construct a diagram to visualize information	30/30%	By the end of week 7
2.	Assessment of the ability to present the completed task	30/30%	At the appropriate lesson
3.	Computer-based testing (multiple choice) in Moodle	40/40%	By the end of week 15

5.2.2. Evaluation criteria

Component	Unsatisfactorily	Satisfactorily	Good	Perfectly
Assessment of the ability to calculate epidemiological indicators and construct a diagram to visualize information	0-7 <i>Task requirements not met</i>	8-14 <i>Most requirements are met, but some components are missing or insufficiently disclosed</i>	15-22 <i>All task requirements met</i>	23-30 <i>The requirements of the task were met, while demonstrating creativity and thoughtfulness.</i>
Assessment of the ability to present the completed task	0-7 <i>The task is not quite complete.</i>	8-14 <i>Task generally completed, with hints and corrections</i>	15-22 <i>Task and presentation completed, uncertainty demonstrated</i>	23-30 <i>The presentation was presented with creativity, demonstrated knowledge of the subject, the ability to communicate, argue, and show determination in defending one's position</i>

5.3. Formative assessment:

To assess current progress in learning and understand areas for further improvement,

No.	Elements of formative assessment	Date
1	Feedback aimed at supporting the student in understanding the correctness of calculations	Every time you check the solutions to problems and diagrams
2	Evaluation of the activity and effectiveness of applicants in discussing presentations. Comments and advice.	Every time in class
3	Reviewing and correcting the task	As it is done

Self-assessment can be used as an element of summative assessment or formative assessment.

6. LEARNING RESOURCES (LITERATURE)

2.1. Main sources

2.1.1. Textbooks and manuals:

1. Veterinary epidemiology- 4rd ed. Michael Thrusfield, 2017

1.1.1. Methodical materials

2. The materials for learning in Moodle <https://cdn.snau.edu.ua/moodle/course/view.php?id=5098>

2.1.1.

2.1.2. Other sources

3. Rebenko G.I. (2022) Using the descriptive method of epidemiology in the form of a KAR survey model to improve the level of biosecurity of pig farms. *Collection of materials of conferences on veterinary medicine*, Scientific and methodological center of the WFPO, 124.

4. Rebenko G. Epizootological problems of the border areas of Sumy region. (2024). *II International scientific and practical conference of scientific and pedagogical workers and young scientists "Current aspects of the development of veterinary medicine in the context of European integration "*, October 17 - 18, 2024, State Veterinary Academy of Ukraine.
5. Harahulya HI, Severin RV, Momot AM, Rebenko HI, Savenko M. (2025) Epidemiology risks associated with bird influenza A(H5N1) virus (review) . *Veterinary Medicine, Animal Husbandry Technology and Environmental Management*, (11), pp. 67-80 <https://doi.org/10.31890/vttp.2025.11.06>

2.2. Additional sources

From the Department of Food Safety and Veterinary Medicine:

http://www.consumer.gov.ua/ContentPages/Pro_Departament/51/

OIE website: <http://www.oie.int>

State Consumer Protection Service website <http://www.consumer.gov.ua>

MSD Veterinary Manual (<https://www.msdevetmanual.com/generalized-conditions>)

Terrestrial Animal Health Code (2017) (<http://www.oie.int/standard-setting/terrestrial-code/>)

Manual of Diagnostic Tests and Vaccines for Terrestrial Animals 2018 (<http://www.oie.int/standard-setting/terrestrial-manual/access-online/>)

AHP Disease Manual http://lrd.spc.int/ext/Disease_Manual_Final

https://en.wikivet.net/Learning_Resources

2.3. Software

For testing during classroom sessions <https://create.kahoot.it/auth/login>

<https://five.epicollect.net/project/asfld/data>

https://www.goconqr.com/p/987892-veterinary-epidemiology-final-exam--bacteria-flash_card_decks

Informal education:

Course and on the platform C D C or Coursera , the certificate of completion of which can be transferred as part of the study of the discipline :

<https://www.cdc.gov/csels/dsepd/ss1978/index.html>

<https://www.coursera.org/learn/study-designs-epidemiology>

<https://www.coursera.org/learn/measuring-disease-epidemiology>

<https://www.coursera.org/learn/epidemic-pandemic-outbreak>

<https://learn.rcvsknowledge.org/course/view.php?id=2>