MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE
SUMY NATIONAL AGRARIAN UNIVERSITY

Epizootiology and Parasitology Department
Faculty of Veterinary Medicine

MODULE SYLLABUS

Veterinary Technologies for the Prevention of Contagious Animal Diseases

(optional)

Implemented in the "Veterinary Medicine" Academic Program
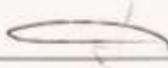
Area of specialization 211 " Veterinary Medicine"

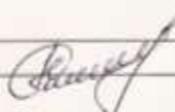**second (master's) level of higher education**

Sumy-2022

Author: _____ (Halyna Rebenko, Phd, Associate professor of Epizootiology and Parasitology Department)

Module syllabus agreed at the Department meeting	Minutes No 15 dated June 15 2022
	Head of Epizootiology and Parasitology Department _____ (O. Kasianenko)

Approved by:

Guarantor of the Academic program _____ (L. Ulko)

Dean of the Faculty _____ (O. Nechyporenko)

Syllabus review (attached) is provided by : _____ (R. Tolbanoscia)

Representative of the Department of Education Quality assurance, licensing and accreditation _____ (N. Baranik)
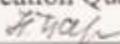
Registered in electronic data base _____ 28. 06. _____ 2022

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

1. MODULE OVERVIEW

1.	Title	**Veterinary Technologies for the Prevention of Contagious Animal Diseases**		
2.	Faculty/Department	Epizootiology and Parasitology		
3.	Type (compulsory or optional)	optional		
4.	Program(s) to which module is attached	211 "Veterinary Medicine"		
6.	Level of the National Qualifications Framework	7-th		
7.	Semester and duration of module	2 and 3		
8.	ECTS credits number	5 ECTS (150 hours)		
9.	Total workload and time allotment	Directed study		Self-directed study
		Lectures	Practicals	Labs	
		14 / 12(0)	-	16 / 26(30)	30 / 60(52)
10.	Language of instruction	English		
11.	Module leader	Halyna Rebenko, Phd, Associate professor		
12.	Module leader contact information	rebenkogi@ukr.net +380958895465		
13.	Module description	Module leads to understanding of the epizootical processes of infectious animal diseases and developing of skills in making decisions on rational measures for the prevention, management and elimination of contagious animal diseases.		
14.	Module aim	The aim of curriculum "Veterinary Technologies for the Prevention of Contagious Animal Diseases" is to form a system of special theoretical knowledge about the objective laws of the processes of the emergence, development, spread and extinction of infectious animal diseases and to give the concept of the reliable diagnostic techniques and effective control procedures for it.		
15.	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, Clinical diagnosis of animal diseases, Veterinary pharmacology, Biotechnology of veterinary immunobiological drugs, Organization and economics of veterinary affairs, Epizootology and infectious animal diseases, Parasitology and invasive animal diseases.		
16.	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: *Academic plagiarism* - grade 0, re-completion of the task. *Academic fraud* (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; *The use of electronic devices* during the final control of knowledge - removal from work, grade 0, re-passing the final control.		
17	Link in Moodle	https://cdn.snau.edu.ua/moodle/course/view.php?id=4009		

2. CORRELATION BETWEEN MODULE LEARNING OUTCOMES (MLOs) AND PROGRAM LEARNING OUTCOMES (PLOs)

MLOs: On successful completion of the module the learner will be able to:	PLOs							How assessed
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 10	PLO 11	
MLO 1. To recognize the risks of infection or invasion for protection of the population from contagious animal diseases (including zoonoses)		+		+	+			Case studies and situation analysis
MLO 2. To use of tools, special devices, laboratory equipment, software and other technical means for monitoring, diagnostic tests, preventive vaccinations, other necessary manipulations during professional activities		+		+			+	Group tasks with self- and mutual assessment.
MLO 3. To use information from local and foreign sources to develop diagnostic, preventive and treatment strategies for communicable diseases; to find up-to-date information in accordance with international and national standards to ensure the epizootic welfare of livestock and avoid the danger of biological waste	+			+			+	Project evaluation Analisisof scientific articles in a given topics
MLO 4. To make plans, organize and carry out measures aimed at preventing the introduction and spread of infectious / invading pathogens, the management of animals suffering from infectious diseases, and the elimination of epizootic foci	+		+		+			Simulation exercises Development of plans for disease-control measures
MLO 5. To evaluate professionally the effectiveness of control and eliminational measures			+		+			Case studies
MLO 6. To demonstrate advanced problem-solving skills and effective communication with people who are interested in human and animal health					+	+		Participation in focus groups, simulation exercises

3. MODULE INDICATIVE CONTENT

Topics	Distribution of hours			Self-directed study
	Directed study			
	Lec	Pract	Labs	
Lecture 1: **Biosecurity to prevent the introduction of the pathogens into the herds.** Plan: 1. Epidemiological surveillance 2. Prevent the introduction of the pathogens into the herds 3. Controlled of animals flows 4. Biosecurity rules	2		2 - Making a project for prevention the introduction of the pathogens into the herds	
Lecture 2: **Laboratory diagnosis as entrance control** 1. Taking samples 2. Serological tests 3. Microbiological tests 4. Helminthological and parasitological investigations 5. Feed examinations	2		2 - Making an order for taking, packing, delivering and investigating of samples accordingly to the individual task	
Lecture 3: **Vaccination to increase herd immunity and provide maternal protection for the newborns** Plan: 1. Herd immunity 2. Active immunological methods (vaccination) 3. Vaccination programme 4. Strategy of immunization	2		Making a list of permitted vaccines against the diseases by task and build the vaccination program.	
Lecture 4: **Disease prevention** Plan: 1. Measures against the introduction of diseases 2. Epizootiological protection of country territory 3. Active creation of animal population 4. General preventive measures in animal population	2		2 - Considering of the measures for epizootiological protection of country territory from the disease introduction	
Lecture 5: **Disease control** Plan: 1. Investigation of epizootiological situation 2. Epizootiological strategy and measures 3. Animal population specific health recovery	2		2 - Cases of epizootiological situation`s investigation	
Lecture 6: **Emerging and Re-emerging Diseases of Animals** Plan: 1. OIE-listed diseases,	2		2 - Making project for vector of transmission control	

2. zoonotic diseases with serious public health implications, 3. other important diseases either impacting or with the potential to impact the major animal species 4. Application of risk analysis			
Lecture 7: **Disease eradication programs** Plan: 1. Prioritization in national emergency disease eradication programmes 2. Zoning 3. Methods of animal disease eradication 4. Measures against zoonotic diseases 5. Strategies for dealing with special circumstances 6. The endgame-verified freedom from infection	2	2 - Elucidation of essential key elements supporting eradication/elimination of infectious diseases 2 - Final lesson	
Total	14	16	30
9-th semester			
Topic 1. Diseases of ruminants		2 - Consideration of situations and organization of measures to combat emerging and transboundary diseases of ruminants. 2 - Consideration of situations and organization of measures to combat local diseases of ruminants. 2 – Making a contingency plan (by tasks)	
Topic 2. Diseases of horses		2 - Consideration of specific situations for diagnosis and organization of measures to combat in horse breeding 2 – Making a contingency plan (by tasks)	
Topic 3. Swine Diseases		2 - Consideration of specific situations for diagnosis and organization of measures to combat diseases in piggery 2 – Making a contingency plan (by tasks)	

Topic 4. Factoral diseases of the young animals.			2 - Diagnosis of diseases of young animals with a predominant lesion of the digestive tract. Principles of treatment, prevention and measures to combat them. 2 - Diagnosis and differential diagnosis of diseases of young animals with predominant lesions of the respiratory system.	
Topic 5. Diseases of dogs, cats and fur animals.			2 - Diseases of dogs; 2 - Diseases of cats;	
Topic 6. Avian Diseases			2 - Acute viral infections of birds 2 - Bacterial infections of poultry	
Topic 7. Bee diseases			2 - Anti-epizootic measures in apiaries.	
Topic8. Fish Diseases			2 - Anti-epizootic measures for fish farms.	
Total			30	46

4. TEACHING AND LEARNING METHODS

MLOs	Teaching methods (directed study)	Hours	Learning methods (self-directed study)	Hours
MLO 1. To recognize the risks of infection or invasion for protection of the population from contagious animal diseases (including zoonoses)	Explanation of possible situations with the risk of infecting people from infected animals. Consideration of cases with emphasis on precautionary measures and measures to eliminate zoonoses.		To study the main zoonoses: signs of their presence in animals, ways of human infection and transmission factors, as well as measures to prevent or eliminate the disease in case of occurrence.	
MLO 2. To use of tools, special devices, laboratory equipment, software and other technical means for monitoring, diagnostic tests, preventive vaccinations, other necessary manipulations during professional activities	Demonstration of available equipment and devices, as well as videos of their use during diagnostic, preventive, veterinary and sanitary works Demonstration of capabilities for working with software for geographic information monitoring systems		Learn the types of tools, devices, equipment, their purpose and features of application	
MLO 3. To use information from local and foreign sources to develop diagnostic, preventive and treatment strategies for communicable diseases; to find up-to-date information in accordance with international and national standards to ensure the epizootic welfare of livestock and avoid the danger of biological waste	Familiarization with the main official sources of information on communicable animal and poultry diseases, especially those that require a rapid response as they are extremely dangerous and notifiable		To practice the skills of obtaining up-to-date information on infectious diseases and the current epizootic situation, performing tasks	
MLO 4. To make plans, organize and carry out measures aimed at preventing the introduction and spread of infectious / invading pathogens, the management of animals suffering from infectious diseases, and the elimination of epizootic foci	Explain the purpose and principles of anti-epizootic measures. Consideration and analysis of items of action plans for the prevention of major communicable diseases and plans for the elimination of diseases (health measures)		Using the instructions on measures to combat specific infectious diseases (according to the tasks and according to the subject of training) to develop action plans to eliminate the outbreak (or recovery of livestock)	
MLO 5. To evaluate professionally the effectiveness of control and eliminational measures	Explanation of the principles of determining the effectiveness of measures and possible ways to improve it		Analyze the provided action plans and the current epizootic situation, make judgments about the effectiveness of certain measures and propose changes, justifying their feasibility.	
MLO 6. To demonstrate advanced problem-solving skills and effective communication with people who are interested in human and animal health	Conducting focus groups and simulation exercises		Find in the relevant instructions on disease control measures a list of prohibitions and restrictions, as well as a list of measures regulated for a particular case	

5. ASSESSMENT
5.1. Diagnostic assessment
5.2. Summative assessment
5.2.1. Intended learning outcomes methods:

No	Summative assessment methods	Grade
	6-th semester	
	Assessment of the ability to plan the location and arrangement of veterinary passages, barriers, isolators for infected animals or other objects of protection of the farm from the introduction of infectious agents	5/5%
	Assessment of the ability to prepare and conduct an allergic diagnostic test for tuberculin, record the reaction to it (based on vivarium) and complete the act.	5/5%
	Assessment of the ability to prepare and select material for laboratory tests, compile an accompanying document and describe the nature of one of the serological reactions	5/5%
	Testing the ability to analyze the data obtained during the epidemiological examination, to form	5/5%

	assumptions about possible causes and draw up an act.	
	Computer testing (multiple choice) "General epizootology 1" in	10/10%
	Focus group with mutual evaluation on understanding the principles of production, use and action of biologicals	5/5%
	Assessment of the ability to prepare and immunize animals / poultry (based on vivarium) and draw up an act.	5/5%
	Development of the plan of anti-epizootic measures on liquidation of an infectious disease and the project of the decision of DNPK (the order of the chairman of the district state administration) concerning its realization	10/10%
	Solving problems to calculate the needs of disinfectants for disinfection and drawing up a disinfection report	5/5%
	Testing the ability to navigate the range of rodenticides and insecticides when choosing products for rodent control and disinsection. Debate	5/5%
	Computer testing (multiple choice) "General epizootology 2" in Moodle	10/10%
	Attestation	15/15%
	Performing the tasks	15/15%
	Total in 6-th semester	100/100
7-th semester		
1	Simulation exercise "Anthrax. Diagnosis, quarantine"	10/10%
2	Simulation exercise "Elimination of tuberculosis"	10/10%
3	Simulation exercise "The case of rabies. Diagnosis and elimination "	10/10%
4	Simulation exercise "Elimination of an outbreak of transboundary disease (FMD)"	10/10%
5	Plan of anti-epizootic measures to eliminate the disease (by options)	20/20%
6	Computer testing (multiple choice) "Common diseases" in Moodle	10/10%
7	Attestation	15/15%
8	Individual task (list of topical vaccines against the disease by task)	15/15%
	Total in 7-th semester	100/100
8 -th semester		
1	Simulation exercise "Elimination of an outbreak of transboundary disease Infectious nodular dermatitis"	30/30%
2	Plan of anti-epizootic measures to eliminate the disease (by options)	30/30%
3	Computer testing (multiple choice) "Diseases of ruminants" in Moodle	10/10%
4	Attestation	15/15%
5	Individual task (list of topical vaccines against the disease by task)	15/15%
	Total in 8-th semester	100/100
9 -th semester		
1	Simulation exercise "Measures to heal the herd from INAN"	10/10%
2	Computer testing (multiple choice) "Equine diseases" in Moodle	10/10%
3	Simulation exercise "Outbreaks of ASF. Diagnosis and elimination "	10/10%
4	Computer testing (multiple choice) "Swine diseases" in Moodle	10/10%
5	Computer testing (multiple choice) "diseases of youths" in Moodle	10/10%
6	Plan of anti-epizootic measures to eliminate the disease (by options)	20/20%
7	Attestation	15/15%
8	Individual task (list of topical vaccines against the disease by task)	15/15%
	Total in 9-th semester	100/100
10-th semester		
1	Simulation exercise "At the reception. Diagnosis of infectious diseases of dogs, cats and fur animals "	10/10%
2	Simulation exercise "Call to the bird yard"	10/10%
3	Debate on the scheme of cultivation in the apiary or fish farm	10/10%
4	Computer testing (multiple choice) "diseases of carnivorous, poultry, bee and fish" in Moodle	10/10%
5	Attestation	15/15%
6	Individual task (list of topical vaccines against the disease by task)	15/15%
	Exam	30/30%

5.2.2. Grading criteria

Summative assessment method	Unsatisfactory	Satisfactory	Good	Excellent
Assessment of the ability to plan the location and arrangement of veterinary passages, barriers, isolators for infected animals or other objects of protection of the farm from the introduction of infectious agents	0-2 The requirements are not oriented	3 Requirements are not met all or with errors	4 Requirements are taken into account, the plan of arrangement and arrangement is substantiated	5 Requirements are considered, the plan of arrangement and arrangement is grounded
Assessment of the ability to prepare and conduct an allergic diagnostic test for tuberculin, record the reaction to it (based on vivarium) and complete the act.	0-2 Does not guided in the procedure.	3 The sequence of the procedure is followed with gross errors	4 The procedure is correctly performed on the object.	5 The procedure is explained in detail and correctly performed on a living object.
Assessment of the ability to prepare and select material for laboratory tests, compile an accompanying document and describe the nature of one of the serological reactions	0-2 Does not guided in the procedure.	3 The sequence of the procedure is followed with gross errors	4 The procedure is correctly performed on the object.	5 The procedure is explained in detail and correctly performed on a living object.
Testing the ability to analyze the data obtained during the epidemiological examination, to form assumptions about possible causes and draw up an act.	0-2 Task requirements not met	3 Most requirements are met, but some components are missing or insufficiently met	4 All task requirements are met	5 Task requirements are met, while creativity and thoughtfulness are demonstrated
Focus group with mutual evaluation on understanding the principles of production, use and action of biologicals	0-2 Does not orient	3 Is able to divide biological products into groups according to purpose	4 Is able to divide biological products into groups and subgroups according to the principle of action and purpose	5 Is able to assess the correctness of the division of biological products into subgroups and justify the identified errors
Assessment of the ability to prepare and immunize animals / poultry (based on vivarium) and draw up an act.	0-2 Does not guided in the procedure.	3 The sequence of the procedure is followed with gross errors	4 The procedure is correctly performed on the object.	5 The procedure is explained in detail and correctly performed on a living object.
Development of the plan of anti-epizootic measures on liquidation of an infectious disease and the project of the decision of DNPK (the order of the chairman of the district state administration) concerning its realizati	0-4 Task requirements not met	5-7 Most requirements are met, but some components are missing or insufficiently met	8-9 All task requirements are met	10 Task requirements are met, while creativity and thoughtfulness are demonstrated
Solving problems to calculate the needs of disinfectants for disinfection and drawing up a disinfection report	0-2 The problem is solved incorrectly	3 The problem is generally solved, but with gross errors	4 The calculation was carried out correctly, the act was drawn up	5 The requirements of the task are met, while demonstrating creativity and thoughtfulness
Test the ability to navigate the range of rodenticides and insecticides when choosing products for rodent control and disinsection (focus groups)	0-2 Task requirements not met	3 Most requirements are met, but some components are missing or insufficiently met	4 All task requirements are met	5 Task requirements are met, while creativity and thoughtfulness are demonstrated
Simulation exercise on topics with the distribution of points	0-4 Role not completed	5-7 The role is generally	8-9 The role is fulfilled,	10 The role is performed with

on the basis of mutual evaluation		fulfilled, with hints and corrections	knowledge of the instruction on struggle against illness is shown, uncertainty is shown	creativity, demonstrated knowledge of instructions for combating the disease, the ability to communicate, argue and show determination in defending their position
Plan of anti-epizootic measures to eliminate the disease (by options)	0-4 (×2, ×3) Task requirements not met	5-7 (×2, ×3) Most requirements are met, but some components are missing or insufficiently met	8-9 (×2, ×3) All task requirements are met	10 (×2, ×3) Task requirements are met, while creativity and thoughtfulness are demonstrated

5.3. Formative assessment

Formative exercises are designed to enable students to develop particular aspects of their learning, prior to summative assessments. Formative exercises are designed to help students use feedback and self-reflection to manage and develop their learning so that they can see how to improve their work.

No	Formative Assessment elements	Date
Autumn semester		
1.	Feedback aimed at supporting the student in understanding the correctness of the documentation	Each time you check the completed acts and accompanying
2.	Self-check for knowledge of the sequence of actions when performing procedures (diagnostic, preventive, veterinary and sanitary) based on the results of the analysis of performed blitz tasks	Blitz control at the beginning of 2,3,4,7,8,10, 14 and 15 classes (in the 6th semester)
	Evaluation of the activity and effectiveness of applicants' participation in focus groups and role-playing in simulation exercises. Comments and tips.	Each time in the form of focus groups or simulation exercises
	Feedback with comments and recommendations on how to solve problems	11th week
	Oral review and correction of plans for anti-epizootic measures to eliminate the disease (by options)	According to the schedule by topics

Self-assessment can be used both an element of formative and summative assessment.

6. LEARNING RESOURCES
6.1. Key resources
1. D.U. Pfeiffer Veterinary Epidemiology - An Introduction, 2002
2. Veterinary epidemiology- 3rd ed. Michael Thrusfield, 2007
3. Václav Kouba Epizootiology: Principles and Methods, 2008
4. Veterinary infection prevention and control. (2012) Linda Caveney, Barbara Jones, with Kimberly Ellis.
5. Veterinary Medicine: A textbook of the diseases of cattle, horses, sheep, pigs and goats - two-volume set, 11th (2017) Peter D. and Kenneth W
6. Veterinary Clinical Epidemiology- 3rd ed. Ronald D. Smith., 2005
7. Aurora Villarroel Practical clinical epidemiology for the veterinarian, 2015
8. Veterinary microbiology and microbial disease – 2nd ed. P.J. Quinn, B.K. Markey, F.C. Leonard, E.S. FitzPatrick, S. Fanning, P.J. Hartigan, 2011
9. Barbara E. Straw ... [et al.]. Diseases of swine — 9th ed, 2006
10. Infectious diseases of dogs and cats – 4-th ed, edited by Creig E.Green, 2013
11. Veterinary Vaccines and Diagnostics (Volume 41) Ronald D. Schultz, 1999
12. B. Austin, D. A. Austin Bacterial Fish Pathogens. Diseases of Farmed and Wild Fish– 4th Edition, 2007

6.2. Guidelines
6.3. Additional resources
MSD Veterinary Manual (https://www.msdvetmanual.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

6.4. Computer Applications and soft

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

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

https://kahoot.it/