MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE
SUMY NATIONAL AGRARIAN UNIVERSITY

Epizootiology and Parasitology Chair

"CONFIRMED"

Chief of Epizootiology and Parasitology Chair

(V. Y. Kassich)
"1" 06 2020

CURRICULUM
(SYLLABUS)

PP 1.14. Epizootology and Infectious Animal Diseases

Speciality: 211 "Veterinary Medicine"

Educational program: "Veterinary Medicine"

Faculty: Veterinary Medicine

2020 – 2021 academic year

2

Curriculum of Epizootology and Infectious Animal Diseases was worked out for the forth-year students of Speciality 211 "Veterinary Medicine"

Authors:

Phd, Associate professor Epizootiology and parasitology Chair

_____Rebenko H. I.

Curriculum has been approbated on the Epizootiology and parasitology Chair meeting. Minutes of " " 2020 №

Chief of Epizootiology and parasitology Chair

_____ (Doctor, prof. V. Y. Kassich)

Coordinated by:

Guarantor of the educational program _____(L. Ulko)

Dean of the Faculty _____(O. Nechiporenko)

Methodist of the educational department _____( )
licensing and accreditation

Registered in electronic data base _____2020

1. Curriculum description

<table>
<tr><td rowspan="2">Indicators</td><td rowspan="2">Branch of knowledge, training direction, qualification level</td><td colspan="2">Characteristics of course</td></tr>
<tr><td>full-time education</td><td>Correspondence</td></tr>
<tr><td rowspan="2">Number of credits - 3</td><td>21 Veterinary Medicine</td><td colspan="2" rowspan="2">Regulatory</td></tr>
<tr><td>Specialty: Veterinary Medicine 211</td></tr>
<tr><td>Module - 2</td><td rowspan="8"></td><td colspan="2">Year of training:</td></tr>
<tr><td>Content modules: 4</td><td>2020-2021</td><td>-</td></tr>
<tr><td rowspan="3">Individual scientific research task : drafting legal documents</td><td colspan="2">Course</td></tr>
<tr><td>3</td><td>-</td></tr>
<tr><td colspan="2">Semester</td></tr>
<tr><td rowspan="2">Total quantity - 90h</td><td>6</td><td>-</td></tr>
<tr><td colspan="2">Lectures</td></tr>
<tr><td rowspan="8">Weekly hours for full-time:
classes – 3
independent work – 3</td><td rowspan="8">Educational degree: master</td><td>16h</td><td>-</td></tr>
<tr><td colspan="2">Practical classes, seminars</td></tr>
<tr><td>30h</td><td>-</td></tr>
<tr><td colspan="2">Laboratory-</td></tr>
<tr><td>-</td><td>-</td></tr>
<tr><td colspan="2">Independent work</td></tr>
<tr><td>44h</td><td>-</td></tr>
<tr><td colspan="2"></td></tr>
<tr><td colspan="2">Type of control:
credit</td></tr>
</table>

Note.

Correlation of numbers of classes to independent and individual work is – 50/50.

2. Aim and Tasks of Curriculum

The aim of curriculum “Epizootology and Infectious 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 foundations of veterinary sanitation.

Tasks of curriculum “Epizootology and Infectious Animal Diseases” are 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 epizootics as well as acquisition of learning outcomes described in EP "Veterinary Medicine":

LO 1. Knows and competently uses the terminology of veterinary medicine.

LO 2. Uses with domestic and foreign sources to develop diagnostic, treating and business strategies.

LO 4. Collects anamnestic data during the registration and observation of animals, deciding on the choice of effective methods of diagnosis and effective treatment of diseases of animals.

LO 5. Establishes connections between clinical signs and results of laboratory researches.

LO 6. Develops quarantine and health measures, methods of therapy, prevention, diagnosis in case of the disease of various etiologies.

LO 7. Formulates conclusions on the effectiveness of selected methods and means of keeping, feeding and treatment of animals, prevention of infectious and non-communicable diseases, as well as production and technological processes in enterprises for keeping, breeding or operation of animals of different classes and species.

LO 8. Monitors the causes of the spread of diseases of various etiologies and biological pollution of livestock waste, as well as materials and veterinary products.

LO 9. Develops measures to protect the population from diseases common to animals and humans.

LO 10. Offers and uses expedient innovative methods and approaches of the decision of problem situations of a professional origin.

LO 15. Knows the rules of storage of various pharmaceuticals and biologicals, ways of their enteral or parenteral use, understand the mechanism of their action, interaction and complex action on the body of animals.

LO 19. Can carry out educational activities among employees of the industry and the public.

Following the completion of the course the student should:

know:

- ✓ Methods and tasks of Epizootology. Relationship epizootology with other sciences. Economic damage from infectious diseases
- ✓ History of epizootology development and its achievement
- ✓ Safety regulations for handling animals with infections
- ✓ Forms of infection, their epizootic significance. Types of infection. Infectious process. The role of macro- and microorganisms and environmental factors in the emergence of the infectious process. Clinical forms and dynamics of the manifestation of infectious disease
- ✓ Types of immunity, their relationship. Biology of the immune response to the administration of vaccines and sera, natural resistance, immunological reactivity and immunity

- ✓ Rules for accepting pathological and other materials for research, as well as the essence of the work of individual departments of the laboratory.
- ✓ Methods for assessing the epizootic effectiveness of vaccine use.
- ✓ Principles of prescribing treatment for infectious animals. The main groups of specific therapy.
- ✓ Methodology for preparing a plan for preventive measures and a plan for the elimination of an infectious disease.
- ✓ Theoretical basis of veterinary sanitation and disinfection,
- ✓ Principles of selection of disinfectants, characteristics of physical and chemical disinfection, basic requirements for disinfectants, as well as equipment for disinfection
- ✓ the principles of disinfestation various livestock facilities and the means used for this purpose.
- ✓ rules for deratization at various livestock facilities, types of deratization and the means used for this purpose.

be able to:

- ✓ Arrange an isolator for sick animals.
- ✓ To diagnose infectious diseases using a comprehensive diagnostic method.
- ✓ To organize and conduct blood sampling for hematological and serological studies.
- ✓ To conduct an allergic diagnostic test with different images on different types of animals and assess allergic reactions;
- ✓ Fill in an act to conduct an allergic diagnostic test and take into account the reaction to it
- ✓ Establish an epizootic diagnosis and justify it, compile an act of epizootic examination
- ✓ Determine the statistical indicators of the epizootic process to display them graphically
- ✓ Make plans for anti-epizootic measures.
- ✓ draft decisions on establishing quarantine or restrictions
- ✓ to organize vaccination of animals,
- ✓ determine the feasibility of using a particular biological product,
- ✓ Draw up a treatment regimen and justify selected therapeutic agents
- ✓ prepare documentation for the immunization
- ✓ determine the concentration of the disinfectant according to the active substances,
- ✓ perform calculations of the necessary amount of disinfectants for different kinds of de-processing of different livestock facilities.
- ✓ To organize disinfection
- ✓ take out sampling for bacteriological quality control of disinfection
- ✓ draw up an act for disinfection, disinfestation, deratization

3. Curriculum of Discipline

Adopted by Academic Council of Sumy NAU in 2019 year.

GENERAL EPIZOLOGOLOGY

Module 1 Epizootic process

Topic 1. Introduction to epizootology

Introduction. Infection and infectious disease. Distribution of pathogenic microbes in the body of animals. Types of infection. The level of study of immunity. Biology of the immune response

Topic 2. Epizootic process

Epizootic process and its driving forces. Epizootic and natural focus of infectious diseases. Fundamentals of epizootic analysis. Methodology for studying the epizootic situation in the district, region, state. Laws and categories of epizootology.

Module 2 Anti-epizootic measures

Topic 3. Prevention and eradication of infectious diseases.

Prevention of infectious diseases. Phenomena of population level in epizootology. Elimination of infectious diseases and health measures. Therapy and treatment and preventive measures in case of infectious diseases

Topic 4. Veterinary and sanitary measures and global protection against infectious diseases.

Veterinary sanitation. Anti-epizootic measures in farms of industrial type. Infectious diseases of wild animals, emergent and exotic infections. Veterinary aspects of health. Scheme of studying infectious diseases.

4. Curriculum Structure

Name of content modules and topics	Number of hours full-time education					
	Total	including				
		L	P	Lab	Ind	I.W.
1	2	3	4	5	6	7
Module 1. Epizootic process.						
Theme 1. Introduction to epizootology.	15	2		10	3	

Theme 2. Epizootic process.	11	6		2	5						
Together for the content modules 1	26	8		12	8						
Module 2. Anti-epizootic measures											
Theme 3. Prevention and eradication of infectious diseases	16	4		8	4						
Theme 4 Veterinary and sanitary measures and global protection against infectious diseases.	18	4		10	4						
Together for the content modules 2	34	8		18	8						
TOTAL HOURS PER SEMESTER	60	16		30	16						

4. Topics of Lectures

Numbers / n	Topics	Number of hours
1	Lecture 1: **Introduction** Plan: 1. Epizootology as a science. 2. Definition, objectives, objects and methods	2
2	Lecture 2: Animal population and its characteristics Plan: 1. Epizootiological importance of resistance 2. Collective health, 3. Morbidity and mortality 4. Epizootiological structure of herds	2
3	Lecture 3: Etiological agents of animal population diseases Plan: 1. Sources of biological etiological agents, its transmission, 2. Natural environmental factors and its interaction	2
4	Lecture 4: Epizootic process . Plan: 1. Epizootic process and its driving forces. 2. Epizootic and natural core of infectious diseases 3. Economic and social factors influencing epizootic process, 4. Consequences of animal population health and diseases,	2

	5. Methodology for studying the epizootic situation in the region, the region, the state.	
	Module 2: Anti-epizootic measures.	8
5	Lecture 5: Epizootiological information system, monitoring and surveillance Plan: 1. Epizootiological information system, 2. Monitoring and surveillance, 3. Epizootiological strategy and measures	2
6	Lecture 6: Active creation of animal population health Plan: 1. General preventive measures, 2. Specific protection of animal population health, 3. Protection of country territory, 4. Therapy and treatment for infectious diseases	2
7	Lecture 7 Epizootiological sanitation**.** Plan: 1. Types and methods of disinfection. Disinfection of different livestock facilities. 2. Quality control of disinfection. 3. Prevention and methods of control of rodents. The organization of deratization and desinsection	2
8	Lecture 8. Measures against diseases Plan: 1. Investigation and analysis of epizootiological situation. 2. Quarantine and restrictive measures . 3. Animal population health recovery 4. Elimination of infectious diseases 5. Anti-epizootic measures in farms of an industrial type.	2
	Together	16

5. Topics of practical classes

Numbers / n	Topics	Number of hours
1	Measures of personal prophylaxis and protection of people from zoonotic diseases.	2
2	Prevention of the spread of infectious agents. Organization of treatment of infectious animals.	2
3	Study of the features of diagnosis of infectious diseases.	2
4	Laboratory methods of diagnostics. Management of mass	2

	blood sampling for serological studies.	
5	Study of rules of pathological material selection and transfer for laboratory research.	2
6	Outbreak investigations. Basics of statistic in epizootology.	2
7	Study of veterinary biologics.	2
8	Animals and poultry vaccination against infectious diseases. Monitoring the effectiveness of vaccines.	2
9	Organization and planning of preventive measures.	2
10	Contingency planning. Disease control and eradication	2
11	Methods of disinfection.	2
12	Application disinfectants and evaluation of the effectiveness of disinfection.	2
13	Bio-waste disposal	2
14	Rodent control.	2
15	Livestock insects control	2
	Total	30

6. Independent work

Numbers / n	Topics	Number of hours
1	**Topic 1.**	4
2	**Topic 2.**	4
3	**Topic 3.**	4
4.	**Topic 4.**	4
	Together	**16**

7. Methods of Training

1. Training Methods for Knowledge:

1.1. ***Verbal:*** narrative, explanation, discussion (heuristic and reproductive), lecture, instruct, work with the book (read, transfer, discharge, scheduling, reviewing, summarizing, making tables, charts, reference compendia etc.).

1.2. ***Visual:*** demonstration, illustration.

1.3. ***Practical:*** practical work, exercise, production practices.

2. Methods for studying the nature of the logic of knowledge.

2.1. ***Analytical***

2.2. ***Synthesis***

2.3. ***Inductive method***

2.4. ***Deductive method***

3. Methods for studying the nature and level of independent mental activity of students.

3.1. ***Problem (problem-information)***

3.2. ***Partly-search (heuristic)***

3.3. ***Exploratory***

3.4. ***Reproductive***

3.5. ***Explanatory demonstration***

4. Active learning methods – use of technical training, brainstorming, debates, roundtables, business and role-playing games, training, use of problem situations, self-knowledge, the use of educational tests and controlling the use of basic lectures.

5. Interactive learning technology – the use of multimedia technology.

Learning can include, but is not limited to:

• formal classroom or online discussions;

• workshops, artistic performances, practical sessions or field trips;

• small group discussions or written exercises;

• class presentations, laboratory work, field trips, designs, roleplaying, wikis, blogs and webinars;

• thoughtful commenting on, reflecting on, or critiquing, content or presentations provided by staff or other students.

Attendance alone is not normally regarded as active participation. Clinical practice refers to learning activities, including the provision of health care under supervision, that relate directly to the diagnosis and management of disease, and the promotion of health.

8. Methods of control

1. Rating control of a 100-point scale assessment ECTS.

2. An intermediate control during the semester (interim certification).

3. Criteria assess of the current work of students:

- the level of knowledge demonstrated in practical classes;
- active in the discussion of issues brought to the class;
- quick control during classes;
- self-study topics in general or specific issues;
- perform analytical calculation tasks;
- writing essays;
- test results;
- writing assignments during the tests;
- production situations, cases and more.

4. Direct consideration in the final assessment of student performance of certain individual tasks:

- educational and practical study of the presentation of results and more.

9. Distribution points that students get to the (test)

Current testing and self-study				Total for modules and IW	Attestation	Total
module 1 30 points		module 2 40 points				
Semantic module 1		Semantic module 2				
T1	T2	T3	T4	85 (70 + 15)	15	100
15	15	20	20			

Grading scale: national and ECTS

Total points for all the educational activities	Mark ECTS	Ukrainian mark	
		For the exam, course project (work) practices	For the test
90 – 100	**A**	Excellent	Passed
82-89	**B**	Good	
75-81	**C**		
69-74	**D**	Satisfactory	
60-68	**E**		
35-59	**FX**	Bad	No passed
1-34	**F**		Repeated study of the course

10. Methodical Support

1. Milanko O. Ya., Rebenko GI, Fotin AI, Milano G.O. Methodical recommendations "Rules of work with infectious animals and infected material" Sumy 2006 - 21 p.

2. Milanko G.O., Avramenko N.O., Rebenko G.I., Milano O.Ya., Avramenko O.A. Methodical instructions for practical work. Discipline "Epizootology and infectious diseases of animals" Prevention of infectious diseases. General prevention Sumy 2006, - 30 p.

3. Milanko G.O., Avramenko N.O., Rebenko G.I., Milano O.Ya, Avramenko O.A. "Disinfection" Methodical instructions for practical work for students of the Faculty of Veterinary Medicine, Sumy 2006 - 60 p.

4. Kascich V.Yu., Rebenko G.I., Fotina G.A. "Methodical instructions for the implementation of the program of educational-clinical practice on epizootology" - methodical recommendations for students of the 4th year of the Faculty of Veterinary Medicine. Sumy 2007 - 32 p.

5. Kascich V.Yu., Rebenko G.I. "Veterinary immunobiological preparations", methodical recommendations for students of the Faculty of Veterinary Medicine. Sumy 2007-40 p.

6. Kascich V.Yu., Rebenko G.I., Milano O.Ya., Milano G.O. Workbook for laboratory and practical classes and independent work on the dissertation "Epizootology and infectious diseases", subsection. "General epizootology" (72 hours). Sumy 2008 - 70 p.

7. Rebenko G.I., Fotin A.I. Organization and implementation of antipyzootic measures, registration of documentation on them. Methodical recommendations for students of the faculty of veterinary medicine, Sumy, 2008 - 28 p.

8. Rebenko G.I., Fotin A.I. Methods of carrying out an epizootological examination, the procedure for keeping the epizootic registry records and compiling epizootic cards. Sumy 2008 - 27s.

9. Kascich V.Yu., Rebenko G.I. Methodical recommendations "Allergic diagnostic tests. Organization and technique of conducting of allergic researches ", Sumy 2008 - 24 p.

10. Rebenko G.I., Gurov T.V., Vershnyak T.V. Methodical recommendations "Sanitary threat of rodents and measures to combat them." - Sumy, 2010 - 48c.

11. Rebenko G.I. Training manual "Dictionary of terms of general epizootology" - Sumy, 2010 - 115s.

12. Kascich V.Yu., Rebenko G.I. Methodical recommendations "Prevention of factor diseases of animals" »- Sumy, 2010 - 23 p.

13. Rebenko GI, Gurova T.V., Vershnyak T.V. Methodical recommendations "Biological waste and methods of their decontamination." - Sumy, 2011 - 34 p.

14. Kascich V.Yu., Rebenko GI, Methodical recommendations "Emergency and exotic infections." - Sumy, 2011 - 16 p.

15. Rebenko G.I. Natural-focal infectious diseases. Tutorial. - Sumy, 2012 - 52 p.

16. Kascich V.Yu., Rebenko G.I. Antimicrobial therapy for infectious diseases of animals. Tutorial. - Sumy, 2013 - 50 s.

17. Rebenko GI, Baydevalatov Yu.A. Epizootology. Probiotics and biotherapy. Methodical instructions / Sumy, 2014, 28 p.

11. Suggested Reading

Basic

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.
   Veterinary Medicine: A textbook of the diseases of cattle, horses, sheep, pigs and goats - two-volume set, 11th (2017) Peter D. and Kenneth W
5. Veterinary Clinical Epidemiology- 3rd ed. Ronald D. Smith., 2005
6. Aurora Villarroel Practical clinical epidemiology for the veterinarian, 2015
7. 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
8. Barbara E. Straw ... [et al.]. Diseases of swine — 9th ed, 2006
9. Infectious diseases of dogs and cats – 4-th ed, edited by Creig E.Green, 2013
10. Veterinary Vaccines and Diagnostics(Volume 41) Ronald D. Schultz, 1999
11. B. Austin, D. A. Austin Bacterial Fish Pathogens. Diseases of Farmed and Wild Fish– 4th Edition, 2007

12. Information Resources

http://www.vet.gov.ua/
http://www.oie.int/
rebenko.halina@gmail.com