

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

Faculty of Veterinary Medicine

Department of Epizootology and Parasitology

Work program (syllabus) of the educational component

Parasitology and invasive animal diseases

(obligatory)

Implemented within the educational program

"Veterinary medicine"

by specialty 211 "Veterinary Medicine"

at the second (masters) level of higher education

Amounts - 2021

Developer: [Signature] Risovanyi V.I. , Ph.D. , Art. Teache
(signature) (surname, initials) (academic degree and title, position)

Considered, approved and approved at the meeting of the Department of Epizootology and Parasitology (name of the department)	Minutes of " <u>18</u> " June 2021 № <u>22</u>	
	Head of Department	<u>[Signature]</u> Kasyanenko O.I. (signature)

Agreed:

Guarantor of the educational program [Signature] Shkromada O.I.
(signature)

Dean of the faculty where the educational program is implemented
[Signature] Nechiporenko OL
(signature)

Work program review (attached) provided: [Signature] Ulko L. G.
(Full name)
[Signature] prof. Saizhenovskiy
(Full name)

Methodist of the Department of Education Quality ,
licensing and accreditation [Signature] (N. Baranik)
(signature) (full name)

Registered in the electronic database, date: 14.07. 2021 p.

Information on viewing the work program (syllabus):

Academic year in which changes are made	The number of the appendix to the work program with a description of the changes	The changes have been reviewed and approved		
		Date and number of the minutes of the meeting of the department	Head of Department	Guarantor of the educational program
2021-2022	-	-	-	-

1. GENERAL INFORMATION ABOUT THE EDUCATIONAL COMPONENT

1.	Name OK	OK 26-Parasitology and invasive diseases animals			
2.	Faculty / department	Veterinary medicine / epizootology and parasitology			
3.	Status OK	Requiredhowl			
4.	Program / Specialty (programs), the component of which is OK for (to be filled in for mandatory OK)	211 «Veterinary medicine»			
5.	NRC level	Level 7			
6.	Semester and duration of study	6,7,8 semester. 54 weeks			
7.	Number of ECTS credits	8			
8.	The total number of hours and their distribution	Contact work (classes)			Individual work
		Lectures	Practical	Laboratory	
		12	-	16	212
		4/4/4		6/6/4	80/80/52
9.	Language of instruction	Ukrainian			
10.	Teacher / Coordinator of the educational component	Art. teacher Drawn Vitaly Ivanovich			
10.1	Contact Information	mob. tel. +38096300740, e-mailrvisu@ukr.net			
11.	General description	The main focus of the educational component is on a wide range of			

Upon completion of the study of the educational component (discipline) the student will be able to:											As estimated by RND
DRN 1. Understand the object, subject and methods of studying the discipline "Parasitology and invasive diseases of animals" Analyze the biological properties of pathogens of parasites from the standpoint of their interaction with the macroorganism and the environment. To differentiate the main systematic groups of parasites according to morpho-anatomical features. Identify methods for diagnosing diseases caused by parasites	+	+								+	<ul style="list-style-type: none"> - Survey of theoretical issues; - performing tasks in a workbook in the laboratory - performing independent tasks in the workbook; - multiple choice testing
DRN 2. To determine the features of the anatomical and morphological structure of the pathogens of helminthiasis, their main systematic groups, their biology and living conditions. To differentiate the main systematic groups of helminths according to morpho-anatomical features.	+	+	+							+	<ul style="list-style-type: none"> - survey of theoretical issues; - performing tasks in a workbook in the laboratory - performing independent tasks in the workbook; - multiple choice testing
DRN 3. Determine the features of the anatomical and morphological structure of parasitiform and acariform mites, insects, their main systematic groups, their biology and living conditions. To differentiate the main systematic groups of parasitiform and acariform mites, insects according to morpho-anatomical features.	+	+	+	+						+	<ul style="list-style-type: none"> - survey of theoretical issues; - performing tasks in a workbook in the laboratory - performing independent tasks in the workbook; - multiple choice testing
DRN 4. Determine the features of the anatomical and morphological structure of parasitic unicellular, their main systematic groups, their biology and living conditions. To differentiate the main systematic groups of protozoan pathogens according to	+	+	+	+						+	<ul style="list-style-type: none"> - survey of theoretical issues; - performing tasks in a workbook in the laboratory - performing independent tasks in the workbook; - multiple choice testing

morpho-anatomical features.																				
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3. TABLE OF CONTENTS OK (CURRICULUM)

Topic. List of issues to be addressed within the topic	Distribution within the general budget of time				Recommended Books ²
	Classroom work			Individual work	
	Lu ke	Lab. with	P.z / semi n. with		
6 semester					
Topic 1. Biological and ecological bases of parasitism. The doctrine of invasive diseases and epizootology of invasive diseases. 1. Definitions: invasion and invasive disease, the course of invasive diseases, parasitism. 2. Nomenclature of invasive diseases. 3. The spread of invasive diseases and the economic damage caused by them, anthroponoses. 4. Sources and ways of infecting animals with pathogens of invasive diseases.	2		-	10	[1,2, 6, 10, 11.]
Topic 2. The doctrine of invasive diseases and epizootology of invasive diseases. 1. Sources and ways of infecting animals with pathogens of invasive diseases. 2. Migration, localization and fixation of parasites in the host organism. 3. Epizootic process in invasive diseases. 4. Chemotherapy and chemoprophylaxis in invasive diseases.		2	-	10	[3, 7, 10, 11]
Topic 3. Veterinary helminthology. 1. Definition, content and scope of veterinary helminthology 2. Features of pathogenesis and immunity in helminthiasis. 3. Epizootological classification of helminthiasis 4. Diagnosis of helminthiasis. 5. Basic principles of measures to control	2		-	20	[1, 2,4, 8, 10]

helminthiasis.					
Topic 4. Trematodes of carnivorous animals and birds. Organization and biology of trematodes. Trematodes of ruminants. 1. Structure and parasitic properties of trematodes. 2. Class digenetic suckers. 3. Fasciolosis of animals. 4. Dicroceliosis of ruminants. 5. Cattle eurythremosis. 6. Paramphistomosis of ruminants. 7. Prostagonimosis and echinostomatidosis of birds. Notocotylidosis of birds. 8. Opisthorchiasis, clonorchiasis, alariosis, methorchiasis, metagonymosis and carnivorous nanophytosis.	2	-	20		[1,2,3, 7, 10, 11]
Topic 5. Cestodes and cestodes of animals. Plan: 1. Morphological - biological characteristics of cestodes. 2. Cysticercosis of cattle and pigs. 3. Cysticercosis (tenuicol, piziform, oat) and teniosis of animals. 4. Animal coenurosis 5. Echinococcosis of animals 6. Teniidosis dipilidiosis of carnivorous animals 7. Diphyllobotriasis of animals. 8. Ruminant anoplocephalatosis and equine anoplocephalidosis. 9. Raietinosis and daveniosis of birds	2	-	20		[1, 2, 6, 9, 10.]
Total for 6 semesters	4	6		80	
7 semester					
Topic 1. Nematodes and nematodes of animals. 1. General characteristics of the contracts Oxyrata and Ascaridata 2. Oxyuratosis of horses 3. Scriabinemosis of cattle 4. Pasalurozkrolov 5. Heteracosis and ganguloteracosis of birds 6. Ascariosis of pigs 7. Parascariosis of horses 8. Neoscarosis of cattle 9. Ascariasis of carnivores and poultry	2			10	[1, 2, 7, 6, 10, 11]

<p>Topic 2. Gastrointestinal strongylatosis and strongylidosis of animals. Strongylatosis of the respiratory organs.</p> <ol style="list-style-type: none"> 1. General characteristics of the contract Strongilata 2. Strongilidosis and cyatostomidosis of horses 3. Gastrointestinal strongylatosis of ruminants and pigs. 4. Hookworm and uncinariosis of carnivores 5. Goose amidostomy. 6. Dictyocaulosis of ruminants. 7. Protostrongylidosis of sheep takiz 8. Metastrongiosis of pigs 9. Singamozp tici 	2	10	[1, 7, 6, 10, 11]
<p>Topic 3. Spiruratosis and trichurosis of animals. Filariasis animals.</p> <ol style="list-style-type: none"> 1. General characteristics of the contracts Spirurata and Trichurata 2. Telasiosis of animals 3. Spiruratosis of birds (streptocarosis, echinuria, tetramerosis). 4. Trichurosis of pigs, ruminants and carnivores. 5. Trichinosis of animals. 6. Cattle onchocerciasis 7. Parafilariasis of horses 8. Setariosis of cattle 9. Heartworm disease of carnivores 	2	20	[1, 7, 6, 10, 11]
<p>Topic 4. Rhabditatosis and acanthocephaly of animals.</p> <ol style="list-style-type: none"> 1. Strongyloidiasis of animals 2. Macracanthorinhosis of pigs 3. Polymorphism of birds 4. Avian phylicosis 	2	20	[1, 7, 6, 10, 11]

<p>Topic 5. Veterinary acarology. Acariform mites and acarosis of animals</p> <ol style="list-style-type: none"> 1. General characteristics of parasitic mites. 2. Ixodes mites. 3. Argas mites 4. Dermanisus mites. 5. General characteristics of acariform mites. 6. Animal sarcoptidosis (swine sarcoptosis, cat notochedrosis). 7. Animal psoroptidosis (psoroptosis, horses, rabbits, cattle, chorioptosis, otodectosis) 8. Knemidokoptoz bird 	2			20	[1, 2, 6, 10, 11]
<p>Total for 7 semester</p>	4	6		80	
<p>Topic 1. Veterinary entomology. Permanent and temporary ectoparasites of animals.</p> <ol style="list-style-type: none"> 1. Morphology and biology of insects. 2. Hypodermatosis of cattle. 3. Estrosis of sheep. 4. Rhinitis of horses. 5. Gastrophilosis of equidae. 6. Malophagoses of animals (sheep's rune). 7. Melophagoses of animals (diagnostic signs of downy mildew, hair follicles and measures to control them) 8. Zoophilic flies and meat flies. 9. Prevention of animal entomoses. 	2		-	14	[1, 2, 6, 10, 11]
<p>Topic 2. Veterinary protozoology and animal protozoa.</p> <ol style="list-style-type: none"> 1. Definition and content of veterinary protozoology, a brief historical background. 2. Epizootology protozoan diseases, pathogenesis, immunity and diagnosis. 3. Diseases caused by spores, their morphology, biology and taxonomy. 4. Babesiosis of cattle 5. Babesiosis of small ruminants. 6. Babesiosis of horses 7. Babesiosis of carnivores 8. Tayloriosis of ruminants 9. Malaria of birds 		2	-	12	[1, 2, 6, 10, 11]

Topic 3. Coccidiosis and isosporosis of animals. 1. General characteristics of coccidia, their taxonomy, biology and morphology. 2. Eimeriosis of chickens, rabbits, cattle and sheep. 3. Toxoplasmosis. 4. Sarcocystosis.	2	-	12	[1, 2, 6, 10, 11]
Topic 4. Diseases caused by flagella. Diseases caused by ciliated and non-nuclear unicellular 1. General characteristics of flagellates, their taxonomy, biology and morphology. 2. Trichomoniasis of animals. 3. Trypanosomiasis (mating disease of horses). 4. Histomonosis of birds. 5. Balantidiosis of pigs. 6. Anaplasmosis of cattle and sheep. Eperitroozoonosis of animals. 7. Lyme disease of pigs. 8. General and special measures to control protozoa.	2	-	14	[1, 2, 6, 10, 11]
Total for the 8th semester	4	4	52	

4. METHODS OF TEACHING AND TEACHING

DRN	Teaching methods (work to be carried out by the teacher during classes, consultations)	Number of hours	Teaching methods (what types of educational activities the student must perform independently)	Number of hours
DRN 1	Discussion of theoretical issues submitted for lectures and independently developed by students; performing exercises in practical classes	6	Registration of the synopsis on independent work Execution of tasks of independent work; development of abstracts. Reports with a presentation on the subject of independent study of the discipline	54
DRN 2	Discussion of theoretical issues submitted for lectures and independently	8	Registration of the synopsis on independent work Execution of tasks of independent work; development of abstracts. Reports with a presentation on the subject of independent study of the discipline	52

	developed by students; performing exercises in practical classes			
DRN 3	Discussion of theoretical issues submitted for lectures and independently studied by students; performing exercises in practical classes	6	Registration of the synopsis on independent work Execution of tasks of independent work; development of abstracts. Reports with a presentation on the subject of independent study of the discipline	54
DRN 4	Discussion of theoretical issues submitted for lectures and independently developed by students; performing exercises in practical classes	8	Registration of the synopsis on independent work Execution of tasks of independent work; development of abstracts. Reports with a presentation on the subject of independent study of the discipline	52

5. EVALUATION BY EDUCATIONAL COMPONENT

5.1. Diagnostic evaluation (indicated if necessary)

5.2. Summative assessment

5.2.1. To assess the expected learning outcomes provided

No	Methods of summative evaluation	Points / Weight in the overall score	Date of compilation
1.	Thematic survey	15 points / 15%	Weekly
2.	Execution of tasks in the workbook in the laboratory	20 points / 20%	According to the schedule
3.	Performing independent tasks in a workbook. Report with a presentation on the subject of independent study of the discipline	30 points / 30%	According to the schedule of delivery of modules
4.	Multiple choice testing	35 points / 35%	According to the schedule

5.2.2. Evaluation criteria

Component³	Unsatisfactorily	Satisfactorily	Okay	Perfectly⁴
	<i><8 points</i>	<i>8-12 points</i>	<i>13-14 points</i>	<i>15 points</i>
Thematic survey	The student can play only individual fragments of the course.	The student has certain knowledge provided in the program of the discipline, has the basic provisions studied at a level that is defined as the minimum allowable	The student in general is well versed in the material, knows the basic provisions of the material, makes an analysis of possible situations based on them and is able to apply in solving typical practical problems, but admits some inaccuracies	The student demonstrates complete and solid knowledge of the educational material in the amount that corresponds to the program of the discipline, correctly and reasonably makes the necessary decisions in various non-standard situations.
	<i><12 points</i>	<i>12-15</i>	<i>15-18 points</i>	<i>20 points</i>
Execution of tasks in the workbook in the laboratory	His knowledge at the final stages of training is fragmentary. Does not provide practical implementation of the tasks formed in the studied discipline. The student is not allowed to take the test.	Using the basic theoretical provisions, the student has difficulty explaining the rules for solving practical / computational problems of the discipline. Performance of practical / individual / control tasks is much formalized: there is a correspondence of the algorithm, but there is no deep understanding of the work	The student has mastered the basic material, and understands the solution of standard practical tasks, has suggestions for the direction of their solutions. Understands the main provisions that are decisive in the course, can solve similar problems with those discussed with the teacher, but does not allow a significant number of inaccuracies	Is able to implement the theoretical provisions of the discipline in practical calculations, analyze and compare the data of the objects of activity of the specialist on the basis of knowledge and skills acquired in this discipline
	<i><15 points</i>	<i>15-25</i>	<i>25-28 points</i>	<i>30 points</i>

³Indicate the component of summative assessment

⁴Indicate the distribution of points and the criteria that determine the level of evaluation

Performing independent tasks in a workbook. Report with a presentation on the subject of independent study of the discipline	The student does not have a complete understanding of the material on the discipline. The student is not prepared to independently solve problems that outline the purpose and objectives of the discipline	Despite the fact that the student completed the program of the discipline, he worked passively, his answers during individual / control works are mostly incorrect, unfounded	Knows the characteristics of the main provisions that are crucial in Execution of individual / control tasks and explanation of decisions made, within the discipline being studied. Errors in answers / decisions / calculations are not systemic.	When performing individual tasks, he showed the ability to solve tasks independently
	<i><10 points</i>	<i>20-25 points</i>	<i>25-30 points</i>	<i>35 points</i>
Multiple choice testing	The student gives the correct answer to several questions (\leq 33% of the correct answers).	The student has some knowledge provided in the program of the discipline, has the basic provisions being studied and gives the correct answer to several questions (34-59% of correct answers).	The student is generally well versed in the material, knows the basic provisions of the material, and gives the correct answer to several questions (60-89% of the correct answers).	The student demonstrates complete and solid knowledge of the study material in the amount that corresponds to the program of the discipline, correctly answers the test questions (90-100% of correct answers).

5.3. Formative assessment:

To assess current progress in learning and understanding areas for further improvement

No	Elements of formative assessment	Date
1	Written survey after studying topics 1-3	3 weeks
	Written survey after studying topics 4-8	5 weeks
3	Written feedback from the teacher while working on practical tasks during classes	Within 1 week after execution

4	Oral feedback from the teacher after stories with a presentation on the subject of independent study of the discipline	During the lesson
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6. LEARNING RESOURCES (LITERATURE)

6.1.The main sources

Methodical support

1. Kasyanenko OI, Rysovany VI, Negreba YV Lazorenko LM, Textbook for laboratory - practical classes and independent work of students in parasitology and invasive animal diseases. Sumy NAU. Sumy, 2020. - 140 p.
2. Drawn VI, Negreba YV, Lazorenko LM, Parasitology and invasive animal diseases. Workbook for laboratory-practical and independent classes Part 1 Veterinary helminthology. For students majoring in 211 "Veterinary Medicine" and 212 "Veterinary Hygiene, Sanitation and Expertise" full-time .87 p.

Recommended Books

Basic

3. Secretary KV Fundamentals of ecological zooparasitology. Lviv, 2007. - 358 p.
4. Nevyadomskaya K..General parasitology. K .: "Scientific thought". - Kyiv, 2006. - 483 p.
5. Galat VF, Berezovsky AV, Prus MP, Soroka NM Parasitology and invasive diseases of animals: Textbook; for ed .. V.F. Galata K .: Higher Education, 2003.– 464 p.
6. Galat VF, Berezovsky AV, Prus MP, Soroka NM Parasitology and invasive animal diseases. Workshop: Teaching. manual. K .: Higher education, 2004. - 238 p.
7. Dakhno IS, Galat VF, Berezovsky AV, Prus MP, Soroka NM Atlas of animal helminths. K .: Vetinform, - 2001. - 118 p.
8. Dakhno IS, Dakhno YI Ecological helminthology: Textbook. manual. Sumy: Kozatsky Val, 2010. - 220 p.

6.2.Additional sources

9. Cherepanov AA, Moskvina AS, Kotelnikov GA Atlas of differential diagnosis of helminths on the morphological structure of eggs and larvae of pathogens. M., "Colossus". 2001. - 76 p.
10. Secretary KV, Danko MM, Stibel VV Veterinary sanitation and hygiene in fish farming. M .: Universum Publishing, 2002. - 177 p.
11. Romanenko NA Malysheva MS Ecological bases of parasitic diseases prevention. M., 2006. - 325 p.
12. Bessonov AS Cystic echinococcosis and geadatidosis. M., 2007. - 670 p

6.3. Software

- Computers with software for practical work
- Microsoft Power Point - data visualization Microsoft Power BI - analytics and data visualization
- Multimedia projector, whiteboard and screen;
- Moodle distance learning and control system