MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE
SUMY NATIONAL AGRICULTURAL UNIVERSITY

Faculty of Veterinary Medicine

Department of episotology and Parasitology

Work program (syllabus) of the educational component

Parasitology and invasive diseases

(obligatory)

Implemented within the educational program

"Veterinary medicine"

by specialty__211 "Veterinary Medicine" ___

at the _second master_ level of higher education

Amounts - 2023

Developer: Negreba Yu.V., Art. teacher

Risovaniy VI, Ph.D., associate professor

Considered, approved and approved at the meeting of the Department of Epizootology and Parasitology	protocol from 19. 06. 2023 № 20
	The head departments (signature) Kasianenko OI (surname, initials)

Agreed:

Guarantor of the educational program (signature) (Full name)

Dean of the faculty where the educational program is implemented
Nechiporenko OL

Work program review (attached) provided: Chekaan O. (Full name)

(Full name)

Methodist of the Department of Education Quality, licensing and accreditation (signature) (N. Baranik) (Full name)

Registered in the electronic database: date: 30.06. 2023.

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

1. GENERAL INFORMATION ABOUT THE EDUCATIONAL COMPONENT

<table>
<tr><td>1.</td><td>Name OK</td><td colspan="4">-Parasitology and invasive diseases</td></tr>
<tr><td>2.</td><td>Faculty / department</td><td colspan="4">Veterinary medicine / epizootology and parasitology</td></tr>
<tr><td>3.</td><td>Status OK</td><td colspan="4">Requiredhowl</td></tr>
<tr><td>4.</td><td>Program / Specialty (programs), the component of which is OK for (to be filled in for mandatory OK)</td><td colspan="4">211 «Veterinary medicine»</td></tr>
<tr><td>5.</td><td>NRC level</td><td colspan="4">Level 7</td></tr>
<tr><td>6.</td><td>Semester and duration of study</td><td colspan="4">7,8 semester.
30 weeks</td></tr>
<tr><td>7.</td><td>Number of ECTS loans</td><td colspan="4">7 ECTS</td></tr>
<tr><td rowspan="3">8.</td><td rowspan="3">The total number of hours and their distribution-210</td><td colspan="3">Contact work (classes)</td><td>Individual work</td></tr>
<tr><td>Lectures</td><td>Practical</td><td>Laboratory</td><td></td></tr>
<tr><td>20

6/14</td><td>-</td><td>32

8/24</td><td>158

46/112</td></tr>
<tr><td>9.</td><td>Language of instruction</td><td colspan="4">English</td></tr>
<tr><td>10.</td><td>Teacher / Coordinator of the educational component</td><td colspan="4">Art. teacher Negreba Yu.V Candidate of Veterinary Sciences, Art. teacher Risovaniy VI.</td></tr>
<tr><td>10. 1</td><td>Contact Information</td><td colspan="4">Negreba Yu.V.- office 62, tel .: 0989498577; viber 0662967712 Yla7578@ukr.net;
Risovaniy V.I .- office 62, tel .: 0963007430; viber 0974706536 rvisu@ukr.net;</td></tr>
<tr><td>11.</td><td>General description of the educational component</td><td colspan="4">The main focus of the educational component is on a wide range of issues related to the ecology of parasitic pathogens and their biological pollution. Theoretical foundations and basic terminology of biological science of parasitology and invasive animal diseases. Characteristics of trematodes, cestodes, nematodes, insects and unicellular organisms, their structure, classification, clinical signs of diseases they cause in animals and birds, pathological changes, effects of parasites on the body, prevention and control measures. Lifetime and postmortem diagnosis of trematodes, cestodes and nematodes of arachnoentomoses and protozoal diseases.</td></tr>
<tr><td>12.</td><td>The purpose of the educational component:</td><td colspan="4">The purpose of the educational component is to form the student's ability to use research methods for patients with invasive animal diseases, diagnose, prepare the necessary forms of drugs, prescribe them, conduct treatment and master skills in organizing therapeutic and preventive antiparasitic measures in farms of various forms of ownership.</td></tr>
<tr><td>13.</td><td>Prerequisites for</td><td colspan="4">The educational component is based on the acquisition of knowledge</td></tr>
</table>

	studying OK, the relationship with other educational components of OP	and skills in the system of professional training of the educational degree "master". When studying the discipline, students have the opportunity to get acquainted with the foundation of any parasitic research, because it gives an idea of the organization, functioning, diversity and role of representatives of different parasitic groups of animals in natural ecosystems and human life. The educational component is closely related to such basic sciences as ecology, physiology, zoology and animal anatomy.
14.	The policy of academic integrity	All tasks related to calculations, planning and registration of accounting documentation will have individual starting points. For violation of academic integrity, the applicant and education may be held liable for the following academic liability: Academic plagiarism - grade 0, re-completion of the task. Academic fraud (writing off, cheating, publishing someone's work for their own) - cancellation of points; re-evaluation, re-execution of work performed with new and current data; The use of electronic devices during the final control of knowledge - removal from work, grade 0, re-passing the final control.
15.	Course link in Moodle	https://cdn.snau.edu.ua/moodle/course/view.php?id=1877

2. LEARNING OUTCOMES FOR THE EDUCATIONAL COMPONENT AND THEIR RELATIONSHIP WITH SOFTWARE LEARNING OUTCOMES

Learning outcomes[1] for OK: Upon completion of the educational component (discipline) the student will be able to:	DRN 1	DRN 2	DRN 4	DRN 5	DRN 6	DRN 7	DRN 9	DRN 10	DRN 18	DRN 19	As estimated by RND
DRN 1. Understand the object, subject and methods of studying the discipline Analyze the biological properties of pathogens of parasites from the standpoint of their interaction with the macroorganism and the environment. ***Conduct*** by morpho-anatomical features differentiation of the main systematic groups of parasites. ***Determine*** methods of diagnosing diseases caused by parasites	+	+						+			− Survey of theoretical issues; − performing tasks in a workbook in the laboratory − performing independent tasks in the workbook; − multiple choice testing
DRN 2. 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.	+	+	+					+			− 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.	+	+	+	+				+			− 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 morpho-anatomical features.	+	+	+	+				+		+	− survey of theoretical issues; − performing tasks in a workbook in the laboratory − performing independent tasks in the workbook; − multiple choice testing

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	
	Luke	Lab. with.	P.z / semin. with		
7 semester					
Topic 1. Biological and ecological bases of parasitism. **The doctrine of invasive diseases and epizootology of invasive diseases.** Definitions: invasion and invasive disease, the course of invasive diseases, parasitism. Nomenclature of invasive diseases. The spread of invasive diseases and the economic damage caused by them, anthropozoonoses. Sources and ways of infecting animals with pathogens of invasive diseases. Sources and ways of infecting animals with pathogens of invasive diseases. Migration, localization and fixation of parasites in the host organism. Epizootic process in invasive diseases. Chemotherapy and chemoprophylaxis in invasive diseases.	2	4	-	22	[3, 7, 10, 11]
Topic 2.Veterinary helminthology.	4	4	-	24	[1, 2,4, 8, 10]

Definition, content and scope of veterinary helminthology Features of pathogenesis and immunity in helminthiasis. Epizootological classification of helminthiasis Diagnosis of helminthiasis. Basic principles of measures to control helminthiasis. Structure and parasitic properties of trematodes. Class digenetic suckers. Fasciolosis of animals. .Dicroceliosis of ruminants. .Euritremosis of cattle. Paramphistomosis of ruminants					
Total for 7 semesters	**6**	**8**		**46**	
Topic 1. Nematodes and nematodes of animals. General characteristics of contracts OxyrataAscaridata Oxyuratosis of horses Scriabinemosis of cattle Pasalurozkrolov Heteracosis and ganguloteracosis of birds Ascarosis of pigs Parascarosis of horses Neoscarosis of cattle Ascariasis of carnivores and poultry Gastrointestinal strongylatosis and strongylidosis of animals General characteristics of the contract Strongilata Strongylidosis and cyatostomidosycones Gastrointestinal strongylatosis of ruminants and pigs. Hookworm and uncinariosis of carnivores Amidostomoses.	2	2		**10**	[1, 2, 7, 6, 10, 11]
Topic 2. Strongylatosis of the respiratory system Dictyocaulosis of ruminants. Protostrongylidosis of sheep takiz Metastrongiosis of pigs Syngamosptics Spiruratosis and trichurosis of animals General characteristics of the contracts Spirurata and Trichurata Telasiosis of animals Spiruratosis (streptocarosis, echinuria, tetramerosis). Trichurosis of pigs, ruminants and carnivores. Trichinosis of animals	2	2		**12**	[1, 7, 6, 10, 11]

Topic 3. Filariasis animals. Cattle onchocerciasis Parafilariasis of horses Setariosis of cattle Heartworm disease of carnivorous animals Rabditatosis and acanthocephaly of animals. Strongyloidiasis of animals Macracanthorinhosis of pigs Polymorphism of birds Avian phylicosis	2	2		**10**	[1, 7, 6, 10, 11]
Topic 4. Veterinary acarology. General characteristics of parasitic mites. Ixodes mites. Argas mites Dermanisus mites Acariform mites and acarosis of animals General characteristics of acariform mites. Sarcoptidosis of animals (sarcoptosis of pigs, notohedrosis of cats). Psoroptidosis of animals (psoroptozovets, horses, rabbits, cattle, chorioptosis, otodectosis) 4. Knemidokoptoz bird	2	2		**12**	[1, 2, 6, 10, 11]
Topic 5. Veterinary entomology. Morphology and biology of insects. Hypodermatosis of cattle. Estrosis of sheep. Rhinitis of horses. Gastrophilosis of ungulates. Permanent and temporary ectoparasites of animals Malophagoses of animals (sheep's rune). Melophagoses of animals (diagnostic signs of downy mildew, hair follicles and measures to control them) Zoophilic flies and meat flies. Prevention of animal entomoses.	2	4	-	**18**	[1, 2, 6, 10, 11]
Topic 6. Veterinary protozoology and protozoa of animals. Definition and content of veterinary protozoology, brief historical background. Epizootology of protozoa diseases, pathogenesis, immunity and diagnosis. Diseases caused by spores, their morphology, biology and taxonomy. Veterinary protozoology, animal babesiosis**.** Babesiosis of cattle Babesiosis of small ruminants. Babesiosis of horses Babesiosis of carnivores Tayloriosis of ruminants Bird malaria	2	4	-	**18**	[1, 2, 6, 10, 11]
Topic 7. Coccidiosis and isosporosis of animals. General characteristics of coccidia, their	2	4	-	**16**	[1, 2, 6, 10, 11]

taxonomy, biology and morphology. Eimeriosis of chickens, rabbits, cattle and sheep. Toxoplasmosis. Sarcocystosis. General characteristics of flagellates, their taxonomy, biology and morphology. Trichomoniasis of animals. Trypanosomiasis (mating disease of horses). Histomonosis of birds.					
Topic 8. Diseases caused by ciliated and non-nuclear unicellular Balantidiosis of pigs Anaplasmosis of cattle and sheep. Eperitrozoonosis of animals. Lyme disease of pigs. General and special measures to control protozoa.		4	-	**16**	[1, 2, 6, 10, 11]
Total for 8 semesters	**14**	**24**		**112**	

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	14	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	40
DRN 2	Discussion of theoretical issues submitted for lectures and independently developed by students; performing exercises in practical classes	14	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	40
DRN 3	Discussion of theoretical issues submitted for lectures and independently developed by students; performing exercises in practical classes	12	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	38

DRN 4	Discussion of theoretical issues submitted for lectures and independently developed by students; performing exercises in practical classes	12	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	40

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

№	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

Component[3]	**Unsatisfactorily**	**Satisfactorily**	**Okay**	**Perfectly**[4]
	<8 points	*8-12 points*	*13-14 points*	*15 points*
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.
	<12 points	*12-15*	*15-18 points*	*20 points*
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.	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
	<15 points	*15-25*	*25-28 points*	*30 points*
Performing independent tasks in a workbook. Report with a presentation on	The student does not have a complete understanding of the material on the discipline. The student is not	Despite the fact that the student completed the program of the discipline, he worked passively, his answers during individual / control works are mostly	Knows the characteristics of the main provisions that are crucial in Execution of individual / control tasks and explanation	When performing individual tasks he showed the ability to solve tasks independently

[3]Indicate the component of summative assessment

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

the subject of independent study of the discipline	prepared to independently solve problems that outline the purpose and objectives of the discipline	incorrect, unfounded	of decisions, within the discipline being studied. Errors in answers / decisions / calculations are not systemic.	
	<10 points	*20-25 points*	*25-30 points*	*35 points*
Multiple choice testing	The student gives the correct answer to several questions (≤ 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 learning progress and understand areas for further improvement

№	**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 dstories with a presentation on the subject of independent study of the discipline	During the lesson

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, Moskvin 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 gadatidosis. 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