MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE
SUMY NATIONAL AGRARIAN UNIVERSITY

Faculty of Veterinary Medicine

Department of Epizotology and Parasitology

Syllabus of the educational component

PARASITOLOGY AND INVASIVE DISEASES

(required)

Implemented within the educational program

"Veterinary Medicine"

in specialty__ 211 "Veterinary Medicine" ___

at the _ second master's _ level of higher education

Sumy – 2025

Developer: _____ Risovany V.I., Associate Professor
(signature) (surname, initials) (academic degree and title, position)

Reviewed, approved and ratified at the meeting of the Department of Epidemiology and Parasitology	Minutes of June 12, 2025 No. 17
	Manager departments _____ (signature) Kasianenko O.I. (last name, initials)

Agreed:

Educational program guarantor _____ O. Chekan
(signature) (full name)

Dean of the Faculty,
where the educational program is implemented _____ Lyudmila NAGORNA

Review of the work program (attached) provided by: _____ Kasianenko O.I.
(Full name)

Methodologist of the Education Quality Department,
licensing and accreditation _____ N. Barsanska
(signature) (full name)

Registered in the electronic database: date: 02.06. 2025.

Information about reviewing the work program (syllabus):

Academic year in which changes are made	Number of the appendix to the work program with a description of the changes	Changes reviewed and approved		
		Date and number of the minutes of the department meeting	Head of the Department	Educational program guarantor

1. GENERAL INFORMATION ABOUT THE EDUCATIONAL COMPONENT

1.	Name OK	OK 28 – Parasitology and Invasive Diseases			
2.	Faculty/department	Veterinary medicine/ epizootology and parasitology			
3.	Status OK	Mandatory			
4.	Program/Specialty (programs) that include OK for (*filled in for mandatory OK)*	211 "Veterinary Medicine"			
5.	NQF level	Level 7			
6.	Semester and duration of study	8th, 9th semester. 30 weeks			
7.	Number of ECTS credits	10 ECTS			
8.	Total hours and their distribution 300 (150 - 8 semester, 150 - 9 semester).	Contact work (classes)			Independent work
		Lectures	Practical	Laboratory	
		16 30	-	60 44	76 76
9.	Language of instruction	English			
10.	Teacher/Educational Component Coordinator	Vitaliy DRAWN			
10. 1	Contact Information	mob tel . +380963007430, e- mail - rvisu @ukr.net			
11.	General description of the educational component	The main attention in the educational component is paid to a wide range of issues related to the ecology of parasites and their biological pollution of the environment. Theoretical foundations and basic terminology of the biological science of parasitology and invasive animal diseases. Characteristics of trematodes , cestodes , nematodes, insects and unicellular organisms, their structure, classification, clinical signs of diseases that they cause in animals and birds, pathological changes, the effects of parasites on the body, prevention and measures to combat them. Intravital and postmortem diagnostics of trematodoses, cestodes and nematodoses arachnoentomosis and protozoal diseases.			
12.	The purpose of the educational component:	The purpose of the educational component is to develop in the student the ability to use methods of researching patients with invasive animal diseases, to make a diagnosis, to prepare the necessary forms of medicines, to write prescriptions for them, to provide treatment, and to master the skills of organizing therapeutic and preventive antiparasitic measures in farms of various forms of ownership.			
13.	Prerequisites for studying OK, connection with	The educational component is based on the acquisition of knowledge and skills in the system of professional training of the educational degree "Master". When studying the discipline, students have the			

	other educational components of OP	opportunity to familiarize themselves with the foundation of any parasitic research, since it is it that gives an idea of the peculiarities of the organization, functioning, diversity and role of representatives of various parasitic groups of animals in natural ecosystems and human life. The educational component is closely related to such fundamental sciences as ecology, physiology, zoology and animal anatomy.
14.	Academic Integrity Policy	All tasks related to calculations, planning, and accounting documentation must have individual source data. For violation of academic integrity, students may be held accountable for the following academic responsibilities: Academic plagiarism – score 0, re-doing the assignment. Academic fraud (copying, cheating, passing off someone else's work as your own) - cancellation of points received; re-taking the assessment; re-doing the work with new initial data; Using electronic devices during the final knowledge test – suspension from work, score 0, retaking the final test.
15.	Link to the course in Moodle	https://cdn.snau.edu.ua/moodle/course/view.php?id=1877
16.	Keywords	Parasitoses , nematodes, trematodes, cestodes, acanthocephals, arachnoentomoses , protozoans .

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

Learning outcomes [1]for OK : After completing the educational component (discipline), the student will be able to:	PRN 1	PRN 2	PRN 4	PRN 5	PRN 6	PRN 7	PRN 9	PRN 10	PRN 18	PRN 19	How is RND assessed?
DRN 1. Understand the object, subject and methods of studying the discipline "Parasitology and Invasive Diseases of Animals". Analyze the biological properties of parasitic pathogens from the perspective of their interaction with the macroorganism and the external environment. To differentiate the main systematic groups of parasites based on morpho -anatomical features. Identify methods for diagnosing diseases caused by parasitic pathogens .	+	+	+	+	+	+	+	+	+	+	− Survey of theoretical questions; − Completing tasks in the workbook during laboratory classes − completing independent tasks in a workbook; − multiple choice testing.
DRN 2. Determine the main systematic groups, their biology and conditions of existence of helminth pathogens based on the features of their anatomical and morphological structure. Differentiate the main systematic groups of helminths based on morpho -anatomical features.	+	+	+	+	+	+	+	+	+	+	− survey of theoretical questions; − completing tasks in the workbook during laboratory classes − completing independent tasks in a workbook; − multiple choice testing.
DRN 3. Determine, based on the features of the anatomical and morphological structure of parasitiform and acariform mites, insects, their main systematic groups, their biology and conditions of existence. Carry out the differentiation of the main systematic groups of parasitiform and acariform mites, insects based on morpho - anatomical features .	+	+	+	+	+	+	+	+	+	+	− survey of theoretical questions; − completing tasks in the workbook during laboratory classes − completing independent tasks in a workbook; − multiple choice testing.

DRN 4. Determine, based on the features of the anatomical and morphological structure of parasitic unicellular organisms, their main systematic groups, their biology and conditions of existence. Differentiate, based on morpho -anatomical features, the main systematic groups of protozoan pathogens .	+	+	+	+	+	+	+	+	+	+	− survey of theoretical questions; − completing tasks in the workbook during laboratory classes − completing independent tasks in a workbook; − multiple choice testing.

3. OK CONTENT (COURSE PROGRAM)

Topic. List of issues to be addressed within the topic	Distribution within the overall time budget				Recommended reading[2]
	Classroom work			Independent work	
	Luke	Lab. with.	P.z / semin . z		
6th semester					
Topic 1. Biological and ecological foundations of parasitism. **The study of invasive diseases and epidemiology of invasive diseases.** Definition: invasion and invasive disease, course of invasive diseases, parasite carriage . Nomenclature of invasive diseases. The spread of invasive diseases and the economic losses caused by them, anthropozoonoses. Sources and routes of infection of animals with pathogens of invasive diseases.	2	8	-	10	[1,2, 6, 10, 11]
Topic 2. The study of invasive diseases and epidemiology of invasive diseases . Sources and routes of infection of animals with pathogens of invasive diseases. Migration, localization and fixation of parasites in the host's body. Epizootic process in invasive diseases. Chemotherapy and chemoprophylaxis for invasive diseases.	2	8	-	8	[3, 7, 10, 11]
Topic 3. Veterinary helminthology. Definition, content and scope of veterinary helminthology	2	8	-	10	[1, 2,4, 8, 10]

Features of pathogenesis and immunity in helminthiasis. Epizootological classification of helminthiasis Diagnosis of helminthiasis. Basic principles of measures to combat helminthiasis.					
Topic 4. Organization and biology of trematodes . Trematodoses of ruminants. Structure and parasitic properties of trematodes . Class digenetic suckers. Fasciolosis of animals. Dicrocoelosis of ruminants. Eurytremosis of cattle. Paramphistomoses of ruminants.	2	6	-	8	[1,2,3, 7, 10, 11]
Topic 5. Trematodoses of carnivorous animals and birds. Prostogonimiasis and echinostomatiasis of birds. Notocotylidosis of birds. Opisthorchiasis , clonorchiasis , alariasis , metorchiasis , metagonimiasis , and nanophytosis of carnivores.	2	6	-	10	[1,2,3, 7, 10, 11]
Topic 6. Cestodes and cestodoses of animals. Morphological and biological characteristics of cestodes . Cysticercosis of cattle and pigs. Cysticercosis (tenuicolous , pisiform , oat) and taeniosis of animals. coenurosis . Echinococcosis of animals.	2	8	-	8	[1, 2, 6, 9, 10]
Topic 7. Taeniasis carnivores , ruminants, horses and poultry. Taeniasis and dipylidiasis of carnivorous animals Diphyllobothriasis of animals. Anoplocephaliatoses of ruminants and anoplocephalidases of horses. Rayetinosis and daveniosis of birds.	2	8	-	10	[1, 2, 6, 9, 10.]
Topic 8. Nematodes and nematodoses of animals. General characteristics of subcontracts Oxyrata and Ascaridata . Oxyuratosis of horses. Scrabbinosis of cattle. The Pasalu was opened . Heteracosis and gangulotheracosis of birds. Ascariasis of pigs. Parascariasis of horses. Neoscariasis of cattle. Ascariasis of carnivorous animals and poultry.	2	8	-	10	[1, 3, 7, 10,17]
Total for 6 semesters	**16**	**60**		**74**	
7th semester					

Topic 1. Strongyloidiasis of horses and strongyloidiasis of ruminant carnivores and poultry. Strongyloidiasis and cyathostomiasis in horses Gastrointestinal strongyloidiasis of ruminants and pigs. Hookworm and uncinariasis of carnivorous animals. Amidostomiasis geese . Dictyocaulosis of ruminants. Protostrongyliasis of sheep and goats. Metastrongylosis of pigs. Syngamosis of poultry.	2	2	-	4	[1, 7, 6, 10, 11,17]
Topic 2. Spirulina and trichuriasis in animals General characteristics of subcontracts Spirurata and Trichurata . Theliasis of animals. Spirulinatosis of birds (streptocariasis , echinuria , tetramerosis). Trichuriasis of pigs, ruminants and carnivores. Trichinosis of animals.	2	2	-	6	[1, 7, 6, 10, 11,15]
Topic 3. Filariatoses, rhabditatoses and acanthocephaloses of animals. Onchocerciasis of cattle. Parafilariasis of horses. Cattle setariasis . Dirofilariasis of carnivorous animals. Strongyloidiasis of animals.	2	4	-	4	[1, 7, 6, 10, 11,14]
Topic 4. Acanthocephalosis of animals. General characteristics of acanthocephala. Macracanthorhynchosis of pigs. polymorphism . Filiculosis birds .	2	2	-	6	[1, 7, 6, 10, 11]
Topic 5. Veterinary acarology. General characteristics of parasitiform mites. Ixodes ticks. Argas mites Dermanisus mites.	2	4	-	6	[1, 2, 6, 10, 11]
Topic 6. Acarosis of animals and birds . General characteristics of acariform mites. Sarcoptidosis of animals (sarcoptosis of pigs, notoedrosis of cats). Psoroptidoses of animals (psoroptosis of sheep, horses, rabbits , cattle, chorioptosis , otodectosis). Cnemidocoptosis of birds.	2	2	-	4	[1, 2, 6, 10, 11]
Topic 7. Veterinary entomology. Morphology and biology of gadflies. Hypodermatosis of cattle. Estrosis of sheep. Rhineestrus in horses. Gastrophilosis of equidae.	2	4	-	6	[1, 2, 6, 10, 11]
Topic 8 Permanent and temporary ectoparasites of animals. Representatives of the genus Gnus, their morphological and biological characteristics. From ophiophilic flies and flesh flies.	2	2	-	4	[1, 2, 6, 10, 11]

Topic 9. Permanent and temporary ectoparasites of animals Malophagous animals (runets) sheep). Animal melophagosis (diagnostic signs of downy mildew and hair mealy mildew and measures to combat them). Prevention entomoses animals .	2-	4	-	6	[1, 2, 6, 10, 11]
Topic 10. Veterinary protozoology and animal protozoa . Definition and content veterinary Protozoology , brief historical help . Epizootology of protozoal diseases, pathogenesis, immunity and diagnostics . Diseases that caused by spores, their morphology , biology and systematics.	2	2	-	4	[1, 2, 6, 10, 11]
Topic 11. Veterinary protozoology, animal babesiosis . Babesiosis big horned cattle . Babesiosis-capable ruminants animals . Equine babesiosis . Babesiosis carnivorous . Theileriosis ruminants animals . Malaria birds .	2	4	-	6	[1, 2, 6, 10, 11]
Topic 12. Coccidiosis and isosporosis of animals. General characteristics of coccidia , their systematics, biology and morphology. Eimeria infection of chickens, rabbits , cattle and sheep.	2	2	-	4	[1, 2, 6, 10, 11,18]
Topic 13. Isosporosis of animals. Toxoplasmosis. Sarcocystosis . Cryptosporidiosis .	2	4	-	6	[1, 2, 6, 10, 11]
Topic 14. Diseases caused by flagellated and ciliated bacteria. General characteristics of the Dzhuguticidae , their systematics, biology and morphology. Trichomoniasis of animals. Trypanosomiasis (horse mating disease). Histomonosis of birds. Balantidiasis of pigs. Anaplasmosis of cattle and small cattle. Epithrozoonosis of animals. Borreliosis of pigs. General and special control measures.	2	2	-	4	[1, 2, 6, 10, 11]
Topic 15. Diseases caused by ciliated and anucleate protozoa. Balantidiasis of pigs. Anaplasmosis of cattle and small cattle. Epithrozoonosis of animals. Borreliosis of pigs. Measures to combat and prevent protozoa .	2	4	-	6	[1, 2, 6, 10, 11]
Total for 7 semesters	**30**	**44**		**76**	

1. TEACHING AND LEARNING METHODS

DRN	**Teaching methods** (work that will be carried out by the teacher during classroom lessons , consultations)	**Number of hours**	**Teaching methods** (what types of learning activities should the student perform independently)	Number of hours
DRN 1	Discussion of theoretical issues raised in lectures and independently worked out by students ; performance of exercises in practical classes.	10	Preparation of an outline for independent work Completion of independent work tasks; development of abstracts. Reports with a presentation on the topic of independent study of the discipline	10
DRN 2	Discussion of theoretical issues raised in lectures and independently worked out by students ; performance of exercises in practical classes.	10	Preparation of an outline for independent work. Completion of independent work tasks; development of abstracts. Reports with a presentation on the topic of independent study of the discipline.	12
DRN 3	Discussion of theoretical issues raised in lectures and independently worked out by students ; performance of exercises in practical classes.	12	Preparation of an outline for independent work. Completion of independent work tasks; development of abstracts. Reports with a presentation on the topic of independent study of the discipline.	12
DRN 4	Discussion of theoretical issues raised in lectures and independently worked out by students ; performance of exercises in practical classes.	12	Preparation of an outline for independent work. Completion of independent work tasks; development of abstracts. Reports with a presentation on the topic of independent study of the discipline.	12

5. EVALUATION BY EDUCATIONAL COMPONENT

5.1.Diagnostic assessment (indicated as needed)

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
1.	Thematic survey	*15 points / 15%*	Weekly
2.	Completing tasks in the workbook during laboratory classes	*20 points / 20%*	According to the schedule
3.	Completion of independent tasks in a workbook . Report with a presentation on the topic of independent study of the discipline	*30 points / 30%*	According to the module delivery schedule
4.	Multiple choice testing	*35 points / 35%*	According to the schedule

5.2.2. Evaluation criteria

Component[3]	**Unsatisfactorily**	**Satisfactorily**	**Good**	**Perfectly**[4]
	<8 points	*8-12 points*	*13-14 points*	*15 points*
Thematic survey	only play individual fragments from the course.	The student has certain knowledge provided for in the discipline program, possesses the basic provisions studied at a level defined as the minimum acceptable	The student generally has a good command of the material, knows the main provisions of the material, makes an analysis of possible situations based on them and is able to apply them when solving typical practical tasks, but allows for some inaccuracies.	The student demonstrates complete and solid knowledge of the educational material in the volume that corresponds to the discipline program, correctly and reasonably makes the necessary decisions in various non-standard situations.
	<12 points	*12-15*	*15-18 points*	*20 points*
Completing tasks in the workbook	His knowledge at the final stages of learning is	Using basic theoretical provisions, the student has difficulty	The student has mastered the basic material,	Able to implement the theoretical

[3]Specify the summative assessment component

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

during laboratory classes	fragmentary. Does not provide practical implementation of tasks that are formed during the study of the discipline. The student is not allowed to take the test.	explaining the rules for solving practical/calculation problems of the discipline. The performance of practical/individual/test tasks is significantly formalized: there is compliance with the algorithm, but there is no deep understanding of the work	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 tasks based on those discussed with the teacher, but allows a small number of inaccuracies	provisions of the discipline in practical calculations, analyze and compare data from objects of activity of this profession on the basis of knowledge and skills acquired from this discipline
	<15 points	*15-25 points*	*25-28 points*	*30 points*
Completion of independent tasks in a workbook . Report with a presentation on the topic of independent study of the discipline	The student lacks a complete understanding of the subject material. The student is not prepared to independently solve the problems outlined in the goal and objectives of the discipline.	Despite the fact that the student completed the program of the academic discipline, he worked passively, his answers during individual / test work are mostly incorrect, unfounded	Knows the characteristics of the main provisions that are of decisive importance in Performing individual/test tasks and explaining decisions made within the discipline being studied. Errors in answers/solutions /calculations are not systemic.	When performing individual tasks, he demonstrated the ability to independently solve the assigned tasks.
	<10 points	*20-25 points*	*25- 30 points*	*35 points*
Multiple choice testing	The student gives the correct answer to several questions (≤ 33% correct answers).	The student has certain knowledge provided for in the discipline program, knows the main provisions being studied, and gives the correct answer to several questions (34–59% of correct answers).	The student generally has a good command of the material, knows the main points of the material, and gives the correct answer to several questions (60–89% of correct answers).	The student demonstrates complete and solid knowledge of the educational material in the volume that corresponds to the discipline program, correctly answers the test questions (90–100% of correct

				answers).

5.3. Formative assessment:

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

No.	**Elements of normative assessment**	**Date**
1	Written survey after studying topics 1-3	3 week
	Written survey after studying topics 4-8	5week
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 the presentation on the topic of independent study of the discipline	During the lesson

6. LEARNING RESOURCES (LITERATURE)

7. LEARNING RESOURCES (LITERATURE)

7.1.Manuals and textbooks

1. Kasyanenko I. O., Negreba Yu. V., Kasyanenko S. M. Helminthiasis of productive animals. Textbook. Sumy: SNAU 2025. –245 p. Approved by the Academic Council of Sumy National Agrarian University (Minutes No. 20 of May 26, 2025).

2. Drawn by V.I.,. Nagorna L.V., Negreba Yu.V., Panasenko O.S. Veterinary technology prevention parasitic diseases of animals . Educational manual . Sumy . 2025. – 262p. Approved Academic Council of Sumy National Agrarian University (Minutes No. 20 of May 26 , 2025).

6.2. Methodological support

3. Kasyanenko O.I., Negreba Yu.V., Rysovany V.I., Mazur I.Ya. Laboratory diagnostics parasitosis animals . Methodical instructions for independent , individual papers for students of 3,4,5 years educational programs 26 « Parasitology and Invasive diseases animals , day forms learning , educational degree " master " 24p. Protocol No. 2 dated 11.11.2024.

4. Kasyanenko O.I., Negreba Yu.V. , Rysovany V.I. Laboratory diagnostics zoonotic diseases productive animals . Methodical instructions for independent , individual papers for students of 3,4,5 years educational programs 211 " Veterinary medicine" OPN " Veterinary hygiene , sanitation and expertise ", daily forms learning , educational degree " master ". 29 p. Protocol No. 2 dated 11.11.2024.

6.3. Basic

5. Galat V.F., A.V., Prus M.P., Soroka N.M. Parasitology and Invasive Animal Diseases: Textbook; ed. V.F. Galata K.: Higher Education, 2003.– 464 p.

6. Galat V.F., Berezovsky A.V., Prus M.P., Soroka N.M. Parasitology and invasive animal diseases. Practical course: Textbook . Kyiv: Higher Education, 2004. – 238 p.

7. Dakhno I.S., Galat V.F., Berezovsky A.V., Prus M.P., Soroka N.M. Atlas of animal helminths. Kyiv: Vetinform , – 2001. – 118 p.

8. Dakhno I.S., Dakhno Yu.I. Ecological helminthology: Textbook . Sumy: Kozatskyi val, 2010. – 220 p.

9. Prykhodko Yu.O., Ponomar S.L., Mazannyi O.V., Nikiforova O.V., Antipov A.A., Goncharenko V.P. Parasitology and invasive animal diseases Workshop (for independent work). Bila Tserkva.: OOO " Bila Tserkivdruk ". 2011. 312p.

6.4. Additional sources

10. Verbytskyi P.I., Dostoevsky. P.I. Handbook of veterinary medicine. Kyiv.: Urozhay, 2004. 1280 p.
11. Galat V.F., Berezovsky A.V., Soroka N.M. Prus M.P. Invasive diseases of pigs: Educational. Kyiv.: NAU, 2006. 94 p.
12. Galat V.F., Berezovsky A.V., Soroka N.M. Prus M.P. Invasive diseases of horses: Textbook . Kyiv: NAU, 2008. 154 p.
13. Boch J., Supperer R. Veterinarme dizinische Parasitologic . Berlin and Hamburg : Publisher Paul Parey , 2002. 906 p.

6.5. Other sources

14. . Evstafieva, V. O.; Kasyanenko , O. I.; Negreba , Y. V.; Kyrychko , B. P.; Levytska, V. A.; Gavryk, K. A. Ovocide efficacy of the disinfectant Germecide -BC against eggs of Trichuris nematodes spp . isolated from cattle. Scientific Messenger of Lviv National University of Veterinary Medicine & Biotechnologies Series : Veterinary Sciences , 2023, Vol 25, Issue 110, DOI 10.32718/nvlvet11018
15. . Kasyanenko , O. I.; Negreba , Yu. V.; Kasyanenko , O. I. Determination of the effectiveness of the veterinary drug "VORMIKIL paste" in helminthic invasion in carnivorous animals. Bulletin of the Sumy National Agrarian University. Series "Veterinary Medicine", issue 1 (64), 2024, 30-36, DOI https://doi.org/10.32782/bsnau.vet.2024.1.5
16. Panasenko O.S.; Nazarenko S.M., Rysovany V.I., *Negreba* , Yu. V.; Ivashyna K.V. Prevalence of eymeriosis associations rabbits in the Sumy region, and pathomorphological assessment. Bulletin of the Sumy National Agrarian University. Series "Veterinary Medicine", issue 4 (67), 2024, 77-83. doi : https://doi.org/10.32782/bsnau.vet.2024.4.11
17. Monitoring of canine heartworm disease in Sumy region. *Scientific and technical bulletin of the National Institute of Veterinary Medicine and Feed Additives.* Lviv 23 (1). 98-104. doi : 10.36359/scivp.2022-23-1.14

6.6.Software

- Computers with software for practical work
- Microsoft PowerPoint – Data Visualization MicrosoftPower BI – Data Analytics and Visualization
- Multimedia projector, flipchart and screen;
- Moodle distance learning and monitoring system

7.2.