

**Ministry of Education and Science of Ukraine**  
**Sumy National Agrarian University**  
Faculty of Veterinary Medicine  
Department of Therapy, Pharmacology, Clinical Diagnostics and  
Biochemistry

## **MODULE SYLLABUS**

**Veterinary technologies for the prevention of non-contagious animal  
diseases**  
(compulsory)

**Implemented in the “Veterinary Medicine” Academic Program**  
**Area of specialization 211 “ Veterinary Medicine”**  
**at the second (master 's) level of higher education**

Author: \_\_\_\_\_ O.V. Musiienko candidate of veterinary  
sciences, associate professor (signature)

Considered, approved and approved at the meeting of the Department of Therapy, Pharmacology, Clinical Diagnostics and biochemistry	protocol from <u>05.06.2024</u> № <u>15</u>
	<div style="display: flex; justify-content: space-between;"><div>(signature)</div><div>O.V. Musiienko (surname, initials)</div></div>

Agreed:

Guarantor of the educational program \_\_\_\_\_

Dean of the faculty where  
the educational program is implemented \_\_\_\_\_ O. L. Nethiporenko

\_\_\_\_\_ O. I. Shkromaba

Work program review (attached) provided: \_\_\_\_\_

Methodist of the Department of Education Quality,  
licensing and accreditation \_\_\_\_\_

H. Hap \_\_\_\_\_ (Heghe Hapanna)

Registered in the electronic database: date: 24.06. 2024

Information on revision of the work schedule programs ( syllabus ):

Educational year in which _ are introduced changes	The number of the application to the work programs with description changes	Changes reviewed and approved		
		Date and number of the minutes of the meeting department	Head department	Educational guarantor programs

1. GENERAL INFORMATION ABOUT THE EDUCATIONAL COMPONENT					
1.	The name is OK	Veterinary technologies for the prevention of non-contagious animal diseases			
2.	Faculty/department	Veterinary medicine / Therapy, pharmacology, clinical diagnostics and biochemistry			
3.	The status is OK	Obligatory			
4.	Program / Specialty ( programs ), component for which there is an OK for ( <i>to be filled in for mandatory OKs</i> )	Veterinary medicine / 211 "Veterinary medicine"			
5.	OK can be offered for ( <i>to be filled in for selective OKs</i> )	-			
6.	Semester and duration study	11-12 semester, 15 weeks			
7.	Number ECTS credits	5			
8.	General the amount of hours and their distribution	Contact work ( classes )			Independent work
		Lectures	Practical / seminar	Laboratory	
9.	11 - Semester	4		8	78
	12- Semester	4		8	48
10.	Language teaching	English			
11.	Teacher / Coordinator of the educational component	O.V. Musiienko candidate of veterinary sciences, associate professor			
11.1	Contact information	<a href="mailto:aleksey_musya@ukr.net">aleksey_musya@ukr.net</a> 0507388690			
12.	General description educational component	The educational component is connected from common objectives of OP and covers aspects formation of a modern specialist in veterinary medicine in-depth theoretical knowledge on the issues of study welfare issues and the science of animal welfare and behavior			
13.	The purpose of the educational component	Training of highly qualified specialists who are able to solve complex issues related to deviations in the behavior of animals as a result of diseases and assessment of animal welfare in order to timely identify and eliminate violations in order to prevent diseases and obtain quality livestock products.			
14.	Prerequisites study of OK, communication with others educational components of OP	1. The educational component is based on OK 8 Basics of animal breeding and feeding OK 14 Physiology of animals OK 20 Veterinary hygiene and sanitation OK 26 Clinical diagnosis of animal diseases 2. The educational component is the basis for OK 31 General and special surgery OK 28 Obstetrics, gynecology and biotechnology of animal reproduction OK 32 Epizootology and infectious diseases OK 33 Internal diseases of animals			

		OK 37 Organization of veterinary affairs and national and international veterinary legislation
15.	Policy of academic integrity	During the study of OK, any manifestations of academicism are not allowed dishonesty . And tools opposition violation academic there is virtue systems <a href="#">Plagiarism check algorithm</a> . In case occurrence violations reaction happens in accordance with the normative documentation of academic integrity participants educational of the process at the Sumy NAU ( <a href="https://snau.edu.ua/viddil-zabezpechennya-yakosti-osviti/zabezpechennya-yakosti-osviti/akademichna-dobrochesnist/">https://snau.edu.ua/viddil-zabezpechennya-yakosti-osviti/zabezpechennya-yakosti-osviti/akademichna-dobrochesnist/</a> ). When detected violation academic integrity done the task is not counted and sent for retry performance _
16.	Link to the course in the system Moodle	<a href="https://cdn.snau.edu.ua/moodle/course/view.php?id=3993">https://cdn.snau.edu.ua/moodle/course/view.php?id=3993</a>

### 3. LEARNING RESULTS UNDER THE EDUCATIONAL COMPONENT AND THEIR RELATIONSHIP WITH PROGRAM LEARNING OUTCOMES

MLOs: On successful completion of the module the learner will be able to:	PLOs					How RND is estimated
	PLOs1	PLOs2	PLOs3	PLOs4	PLOs7	
<b>MLOs 1.</b> To understand the role of veterinary science and practice in the prevention of internal diseases of animals . To analyze the peculiarities of the prevention of internal diseases of animals. To understand the peculiarities of the clinical examination of sick animals. Carry out dispensation of farm animals: analyze production indicators, housing and feeding conditions, determine clinical status, analyze feed quality, conduct laboratory tests. Use received knowledge for the future therapeutic activities .	+		+			– protection of the animal behavior research project – about the question of theoretical questions – test control – in iconography tasks from independent work
<b>MLOs 2.</b> Understand the indicators of complete feeding, namely: the content of dry matter in the diet, the concentration of nutrients and biologically active substances. Organize rational feeding of animals taking into account species, age, breed, physiological state, production use of animals, type of ration. Determine the composition of feed, which can contain a significant amount of substances with different chemical structures. Know the value of biologically active substances that can accumulate in some feeds in toxic concentrations.		+		+	+	– solving the task – demonstrative performance of research tasks. – about the question of theoretical questions – test control – in iconography independent tasks work
<b>MLOs 3.</b> To analyze the microclimate in livestock premises, the influence of lighting, ventilation, air temperature in premises, humidity, gassiness, saturation of microflora on the condition of animals. To check the performance of animal training (cleaning and trimming of hooves, filing of horns, vaccination, etc. and to develop measures to combat insects, to carry out prevention of helminthiasis, hemosporidiosis and other animal diseases. Apply means of chemical and microbiological synthesis in order to balance rations. Know the compounds that inhibit the processes of digestion and	+	+			+	– about the question of theoretical questions – final control – computer testing – solving situational problems – in iconography tasks from independent work

use of feed nutrients, that inactivate certain vitamins or increase the need for them.						
<b>MLOs 4.</b> Know the theoretical basics and practical aspects dispensation of ruminants, horses and pigs, the principles of sampling and continuity , a system of planned diagnostic, preventive and therapeutic measures aimed at creating highly productive herds of animals. Analyze production indicators. To develop systems of measures to ensure a high level of non-specific resistance, milk yield and health preservation of sows. Carry out dispensation of young animals in the maternity ward and during the growing and fattening period. To learn the method of calculation and analysis of dispensary indicators, to draw conclusions and develop recommendations for improving the organization, quality and efficiency of dispensary	+		+		+	<ul style="list-style-type: none"> <li>– about the question of theoretical questions</li> <li>– presentation and defense of a practical task</li> <li>– test control</li> <li>– solving situational problems</li> <li>– in iconography tasks from independent work</li> </ul>

#### 4. CONTENTS OF THE EDUCATIONAL COMPONENT (COURSE PROGRAM)

Subject . List of issues to be addressed within the topic	Distribution within the general time budget				Recommended reading <sup>1</sup>
	Classroom work			Self-directed study	
	Lk	P.z	Lab.		
11th semester					
Topic 1. <b>Familiarization with the general prevention of internal diseases of animals</b> General prevention of internal diseases of animals. Dispensary: analysis of animal feeding, regime and hygiene of feeding, analysis of feed quality. Energy supply and ways to improve it. Calculation of exchange energy.	2		2	20	[1, 3, 7, 8, 10, 12]
Topic 2. <b>Analysis of animal feeding, regime and hygiene of feeding, analysis of feed and water quality.</b> Study of the effects of substances that destroy nutrients and biologically active substances. Investigation of poisoning of pigs fed fish and meat-and-bone meal with an increased amount of histamine .			2	20	[1, 2, 4, 5, 8, 14]
Topic 3. <b>Study of animal husbandry technologies and disease prevention methods during the grazing period.</b> Study of the botanical composition of pastures in order to clean them of poisonous herbs, metal and other objects, if necessary, arranging a place to protect animals from the sun, wind and rain, equipping it with a source of water.	2		2	18	[1, 3, 5, 8, 9, 18]
Topic 4. <b>Use of chemical and microbiological synthesis tools.</b> Studying the means of chemical and microbiological synthesis with the aim of balancing diets, eliminating the lack of nitrogenous substances, macro- and microelements, vitamins, prevention of alimentary and endocrine diseases.			2	20	[3, 5, 6, 7, 10, 13]



12th semester					
Topic 5. <b>Peculiarities of dispensation of ruminants.</b> Dispensing of cows and heifers, as well as calves at various stages of fattening. Determination of the clinical status of cows and heifers.	2		2	16	[1, 4, 7, 8, 10, 15]
Topic 6. <b>Peculiarities of dispensation of horses and pigs.</b> Study of the clinical status of stock of different age groups of horses and clinical study of breeding stallions, mares and other high-value animals.	2		2	16	[2, 3, 6, 9, 10, 14]
Topic 7. <b>Peculiarities of dispensation of young animals in the maternity ward and during the growing and fattening period.</b> Development of a system of measures to ensure a high level of non-specific resistance, milk yield and preservation of the health of young animals. Development of recommendations for improving the organization, quality and efficiency of dispensary			4	12	[1, 3, 5, 8, 9, 17]
Total	8		16	126	

#### 4. TEACHING AND LEARNING METHODS

MLOs	Teaching methods (directed study)	hours	Learning methods (self-directed study)	hours
MLOs 1.	Methods presentation by source knowledge : <i>Verbal</i> : story , explanation , conversation ( heuristic and reproductive), lecture , instruction . <i>In person</i> : demonstration , illustration , observation . Active methods : ( use technical means training and problematic situations , industrial classes , group classes research in the conditions of " Educational production complex in - vivarium " , use educational and controlling tests ) Interactive methods presentation : ( use	22	Methods learning by source knowledge : <i>Verbal</i> : working with a book ( reading , retelling , writing , taking notes , making tables , graphs , reference abstracts ) , <i>visual</i> : observations . Methods learning by the nature of logic cognition ( <i>analytical</i> , synthesis <i>methods</i> , and <i>inductive method</i> , <i>deductive method</i> ). Active methods ( brainstorming , binary classes , group research ) . Interactive technologies learning ( use multimedia technologies , dialog training , cooperation students ( cooperation ) ) . Self-study ,	24

	multimedia technologies , electronic tables , case- study (method of analysis specific situations ), dialogic training , cooperation students ( cooperation )		analysis , preparation of multimedia reports	
MLOs 2.	Methods presentation by source knowledge : <i>Verbal</i> : story , explanation , conversation ( heuristic and reproductive), lecture , instruction . <i>In person</i> : demonstration , illustration , observation . Active methods : ( use technical means training and problematic situations , industrial classes , group classes research in the conditions of " Educational production complex in - vivarium " , use educational and controlling tests ) Interactive methods presentation : ( use multimedia technologies , electronic tables , case- study (method of analysis specific situations ), dialogic training , cooperation students ( cooperation )	24	Methods learning by source knowledge : <i>Verbal</i> : working with a book ( reading , retelling , writing , taking notes , making tables , graphs , reference abstracts ), <i>visual</i> : observations . Methods learning by the nature of logic cognition ( <i>analytical</i> , synthesis <i>methods</i> , and <i>inductive method, deductive method</i> ). Active methods ( brainstorming , binary classes , group research ). Interactive technologies learning ( use multimedia technologies , dialog training , cooperation students ( cooperation ) . Self-study , analysis , preparation of multimedia reports	26
MLOs 3.	Methods presentation by source knowledge : <i>Verbal</i> : story , explanation , conversation ( heuristic and reproductive), lecture , instruction . <i>In person</i> : demonstration , illustration , observation . Active methods : ( use technical means training and problematic situations , industrial classes , group classes research in the conditions of " Educational production complex in - vivarium " ,	24	Methods learning by source knowledge : <i>Verbal</i> : working with a book ( reading , retelling , writing , taking notes , making tables , graphs , reference abstracts ), <i>visual</i> : observations . Methods learning by the nature of logic cognition ( <i>analytical</i> , synthesis <i>methods</i> , and <i>inductive method, deductive method</i> ). Active methods ( brainstorming , binary classes , group research ). Interactive technologies learning ( use multimedia technologies , dialog training	28

	<p>use educational and controlling tests )</p> <p>Interactive methods presentation : ( use multimedia technologies , electronic tables , case-study (method of analysis specific situations ), dialogic training , cooperation students ( cooperation )</p>		<p>, cooperation students ( cooperation ) . Self-study , analysis , preparation of multimedia reports</p>	
MLOs 4.	<p>Methods presentation by source knowledge :</p> <p><i>Verbal</i> : story , explanation , conversation ( heuristic and reproductive), lecture , instruction .</p> <p><i>In person</i> : demonstration , illustration , observation .</p> <p>Active methods : ( use technical means training and problematic situations , industrial classes , group classes research in the interfaculty NNL of electronic microscopy , use educational and controlling tests )</p> <p>Interactive methods presentation : ( use multimedia technologies , electronic tables , case-study (method of analysis specific situations ), dialogic training , cooperation students ( cooperation )</p>	34	<p>Methods learning by source knowledge :</p> <p><i>Verbal</i> : working with a book ( reading , retelling , writing , taking notes , making tables , graphs , reference abstracts ),</p> <p><i>visual</i> : observations .</p> <p>Methods learning by the nature of logic cognition ( <i>analytical</i> , synthesis <i>methods</i> , and <i>inductive method, deductive method</i> ).</p> <p>Active methods ( brainstorming , binary classes , group research ).</p> <p>Interactive technologies learning ( use multimedia technologies , dialog training , cooperation students ( cooperation ) . Self-study , analysis , preparation of multimedia reports</p>	28

## 5. EVALUATION BY THE EDUCATIONAL COMPONENT

### 5.1. Diagnostic assessment (specified as necessary)

### 5.2. Summative assessment

5.2.1. To assess the expected learning outcomes, it is provided

No	Methods summative assessment	Points / Weight in total assessment	Compilation date
11th semester			
1.	Thematic survey	20 points / 20%	Weekly
2.	Work with animals	25 points / 25%	According to the LPZ schedule
3.	Solving situational tasks	25 points / 25%	According to the schedule
4.	Defense of the synopsis from independent work	15 points / 15%	According to the module delivery schedule
5.	Multiple choice tests	15 points/15%	According to the schedule
12th semester			
1.	Current control : Thematic poll Implementation laboratory- practical tasks classes	25 points / 25 %	4 week
2.	Protection of the project on the study of animal behavior, solving the task. demonstrative performance of research tasks, solution of situational problems, presentation and defense of a practical task	30 points / 30 %	13 week
3.	In iconography tasks from independent work	15 points / 15 %	According to graphics delivery modules
4.	Exam	30 points / 30 %	In session

### 5.2.2. Evaluation criteria

Component	Unsatisfactorily	Satisfactorily	Fine	Perfectly
<b>Current control</b> : thematic poll in completing tasks in laboratory- practical classes	<b>&lt;2 0 points</b>  Task requirements not met.	<b>2 1 - 3 0 points</b>  Most of the requirements are met, but individual components are missing or insufficiently disclosed, there is no analysis of other approaches to the issue. Partially reproduced knowledge based on	<b>3 1- 39 points</b>  Most of the requirements are met, but some components are missing. Reproduced knowledge of directly taught material within the program with some evidence of wider study.	<b>40 points</b>  All the requirements of the task were met, creativity, thoughtfulness was demonstrated, and an own solution to the problem was proposed. Reproduced knowledge obtained outside of the directly taught material within the program.

		directly presented material within the program.		
Protection of the project on the study of animal behavior, solving the task. demonstrative performance of research tasks, solution of situational problems, presentation and defense of a practical task	<b>&lt; 11 points</b>	<b>12-20 points</b>	<b>26-29 points</b>	<b>30 points</b>
	Task requirements not met	Most of the requirements are met, but individual components are missing or insufficiently disclosed, there is no analysis of other approaches to the issue	Most of the requirements are met, but some components are missing	All the requirements of the task were met, creativity, thoughtfulness was demonstrated, and an own solution to the problem was proposed
Periodic control, multiple choice tests. In iconography tasks from independent work	<b>&lt; 3 points</b>	<b>4-10 points</b>	<b>11-14 points</b>	<b>15 points</b>
	The student gives correct answer to several questions ( $\leq 33\%$ correct answers ).	The student has certain knowledge provided in the program disciplines , owns the main ones provisions that _ are studied and gives correct answer to several questions (34–59% correct answers ).	The student is generally good at it material , knows the main ones position material , and gives correct answer to several questions (60–89% correct answers ).	Student demonstrates full and strong knowledge educational material in the amount that responds program disciplines , correctly gives answer to the test questions (90–100% correct answers ).

### 5.3. Formative assessment:

To assess the current progress in learning and understand the directions for further improvement is provided

No	Elements formative assessment	Date
1.	Oral reverse communication after study of topics 1-3, 4-7	3 week
2.	Written reverse connection of topics 1-3	Within 1 week after drafting
3.	Testing after study of topics 4-7	7 week
4.	Intermediate control _	According to the schedule
5.	Current control (testing, summation of points) 15 week	15 week
6.	Written feedback from the teacher after checking the synopsis for independent study of the discipline.	For 1 week , after implementation

## 6. EDUCATIONAL RESOURCES (LITERATURE)

### 6.1. Main sources

- 1 Levchenko V.I., Vlizlo V.V. , Kondrakhin I.P. etc. Veterinary clinical biochemistry.; under the editorship V.I. Levchenko and V.L. Galyas . White Church , 2002. 400 c.
- 2 Sudakov M.O., Tsviliovskyi M.I., Bereza V.I. etc. Internal non-infectious diseases of animals.;

- under the editorship M.O. Sudakov. K.: Meta, 2002. 352 p.
- 3 Levchenko V.I., Kondrakhin I.P., Vlizlo V.V. etc. Internal diseases of animals.; under the editorship V.I. Levchenko. White Church , 2001. Part 2. 544 c.
  - 4 Levchenko V.I., Kondrakhin I.P., Sudakov M.O. etc. Internal diseases of animals.; under the editorship V.I. Levchenko. White Church , 1999. Part 1. 376 c.
  - 5 Verbytskyi P.I., Dostoevsky P.P. Handbook of a doctor of veterinary medicine. K.: "Harvest", 2004. 1280 p.
  - 6 Sudakov M.O., Bereza V.I., Pogurskyi I.G. etc. Microelementoses of farm animals; under the editorship M.O. Sudakov. [2nd ed.]. K.: Urozhai, 2001. 144 p.
  - 7 Contemporary reference book doctor veterinary medicine \_ Under general editor V.G. Havrysha and V.A. Sidorkina . Izd-e 8th addn . Rostov n/a: Phoenix , 2007. 608 p.
  - 8 Tsvilikhovskiy M.I. etc. Internal diseases of animals: Workshop. K.: Aristei , 2005. 148 p.

## 6.2. Additional sources and online resources:

9. Musienko O.V., Musienko V.M., Ulko L.G., Kisterna O.S. Methodical manual "Veterinary technologies for the prevention of non-communicable diseases of animals". Course of lectures. Sumy: RVV SNAU, 2015. 56 p.
10. Musienko O.V., Musienko V.M., Ulko L.G., Kisterna O.S. Methodological manual "Veterinary technologies for the prevention of non-communicable diseases of animals". Sumy: RVV SNAU, 2015. 52 p.
11. Ulko L.H., Musienko V.M., Sklyar O.I., Musienko O.V., Kisterna O.S. Methodical instructions for the implementation of the program of educational and industrial practice. Sumy: RVV SNAU, 2002. 70 p.
12. Ulko L.G., Musienko V.M., Musienko O.V., Kisterna O.S. Rules of personal hygiene and occupational safety when examining sick animals and providing them with medical care. Sumy: RVV SNAU, 2005. 17 p.
13. Ulko L.G., Musienko V.M., Musienko O.V., Kisterna O.S. Methodical guide to SELF-EMPLOYMENT and independent work. "Dispensary of the village of animals". Sumy: RVV SNAU, 2006. 72 p.
14. [http : // www . vetmed \\_ wsu \\_ edu](http://www.vetmed.wsu.edu)
15. Electronic educational course: Veterinary toxicology (<http://vetmed.nauu.kiev.ua/course/view.php?id=41>)
16. Medical library , section " Veterinary pharmacology and toxicology » <http://www.twirpx.com/files/medicine/veterinary/pharmacy/>
17. Medical library , section " Veterinary " <http://www.booksmed.com/veterinariya/2459-veterinarnaya-toksikologiya-s-osnovami-ekologii-argunov-uchebnik.html>
18. Scientific and educational portal : Veterinary pharmacologist and toxicologist <http://originweb.info/science/codes/16/160004.html> .

## 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
- MOODL " platforms ; " ZOOM " ; " Viber " ; " Facebook " .

**Review of Work program ( syllabus )**

<b>The parameter according to which the work program ( syllabus ) of the educational component is evaluated by the guarantor or a member of the project group</b>	<b>So</b>	<b>No</b>	<b>Comment</b>
Learning outcomes for the educational component (DRN) correspond to the NRC	+		
The results of the study by the educational component (DRN) correspond to the prescribed PRN (for mandatory OKs)	+		
Learning outcomes by educational component provide an opportunity to measure and evaluate the level of their achievement	+		

Member of the project team OP groups \_\_\_\_\_

<b>The parameter by which the work program (syllabus) of the educational component is evaluated by the teacher of the corresponding department</b>	<b>So</b>	<b>No</b>	<b>Comment</b>
General information about the educational component is sufficient	+		
Learning outcomes for the educational component (DRN) correspond to the NRC	+		
The results of training according to the educational component (DRN) provide an opportunity to measure and evaluate the level of their achievement	+		
Learning outcomes (LRE) refer to students' competencies , not the content of the discipline (contain knowledge, skills, abilities, and not the topics of the discipline's curriculum)	+		
The content of the OK is formed in accordance with the structural and logical scheme	+		
Educational activity (teaching and learning methods) enables students to achieve expected learning outcomes (LEIs)	+		
The educational component involves learning through research that is appropriate and sufficient for the relevant level of higher education	+		
The assessment strategy within the educational component is in accordance with University/faculty policy	+		
The provided assessment methods make it possible to assess the degree of achievement of learning outcomes by educational component	+		
The workload of students is adequate to the volume of the educational component	+		
The recommended learning resources are sufficient to achieve the learning outcomes (LEOs)	+		
The literature is relevant	+		

Reviewer ( teacher departments ) \_\_\_\_\_

( name )

(position, personal identification number)

( signature )