Ministry of Education and Science of Ukraine
Sumy National Agrarian University
Faculty of Veterinary Medicine
Department of Internal medicine, Pharmacy and Biochemistry

MODULE SYLLABUS

Internal diseases of animals

(compulsory)

Specialty	**211 VETERINARY MEDICINE**
Educational program	**21 VETERINARY MEDICINE**
Level of higher education second	**(master's) level of higher education**

Author: _____ O.V. Musiienko candidate of veterinary sciences, associate professor

Considered, approved and approved at the meeting of the department internal medicine, pharmacy and biochemistry	Prot 11 01.06.2026 Head Department _____ Oleksandr Nechyporenko

Agreed:
Guarantor of the Academic program _____

Dean of the Faculty _____(Liudmyla Nahorna)

Review of the work program provided: _ _____

_____

Methodist of the Department of Education Quality, licensing and accreditation _____ (N. Baranik)

Registered in the electronic database: date: 29.06 2026

Information on reviewing 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">Internal diseases of animals</td></tr>
<tr><td>2.</td><td>Faculty / department</td><td colspan="4">Faculty of Veterinary Medicine; Department of Internal medicine, Pharmacy and Biochemistry</td></tr>
<tr><td>3.</td><td>Status OK</td><td colspan="4">Obligatory</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 hygiene, sanitation and examination</td></tr>
<tr><td>5.</td><td></td><td colspan="4"></td></tr>
<tr><td>6.</td><td>Semester and duration of study</td><td colspan="4">11</td></tr>
<tr><td>7.</td><td>Number of ECTS credits</td><td colspan="4">5</td></tr>
<tr><td rowspan="2">8.</td><td rowspan="2">The total number of hours and their distribution</td><td colspan="3">Contact work (classes)</td><td>Independent work</td></tr>
<tr><td>Lectures
14</td><td>Practical / seminar</td><td>Laboratory
46</td><td>90</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">O.V. Musiienko candidate of veterinary sciences, associate professor</td></tr>
<tr><td>11.1.</td><td>Contact Information</td><td colspan="4">aleksey_musya@ukr.net
0507388690</td></tr>
<tr><td>11.</td><td>General description of the educational component</td><td colspan="4">Internal diseases of animals play a major role and occupy a prominent place in the system of training veterinary medicine. The doctrine of internal diseases of animals forms medical thinking. The value of this exercise goes beyond the problem of prevention and treatment of internal diseases that the methods and means are quite widely used in other areas in eterynarnoyi medicine. The practical significance of the discipline "Internal diseases of animals" lies in the mass of these diseases, which occupy a predominant place in animal pathology, causing great economic damage.
The task of studying the discipline is to consolidate the material studied and students acquire skills in solving certain tasks, in mastering the necessary techniques, in the analysis of practical situations, phenomena, etc., in addition to general tasks, students must be equipped with skills and abilities. classes to acquaint them with the methods of scientific research and technical experiment. The study of the course is based on the generalization of the material with a philosophical inclination and the achievements of physics, chemistry, biology, genetics and practice with the use of modern methods of laboratory research.</td></tr>
<tr><td>12.</td><td>The purpose of the educational component</td><td colspan="4">During the study of the discipline, in the process of mastering theoretical knowledge from different sections of the discipline, acquaintance with modern methods of work adopted in industry laboratories, students of the second level acquire the following competencies :
Theoretical knowledge and skills will allow graduates of OS "Master" during professional activities to successfully solve practical problems of non-communicable pathology (patterns of occurrence and spread of diseases, features of their course, diagnosis and treatment, different groups in farms and clinics).</td></tr>
<tr><td>13.</td><td>Prerequisites for studying OK, the relationship with other educational components of OP</td><td colspan="4">1. The educational component is based on EK
Animal physiology
Clinical diagnosis of animal diseases
Veterinary pharmacology
2. The educational component is the basis for the following EK:</td></tr>
</table>

		Wind Mr. Arnie technology prevention of non-communicable animal diseases
13.1	Material and technical support for the implementation of the EK	The bases for conducting internships can be modern enterprises, production facilities, institutions, organizations of various forms of ownership, classrooms, laboratories, training and practical centers, etc., corresponding to the specialty and/or educational program. Enterprises, organizations, institutions, regardless of the form of ownership and subordination, which are bases for internships, must meet the following requirements: - the presence of structures that correspond to the educational programs according to which specialists are trained at a higher education institution; - the ability to provide interns with jobs during the internship; - granting the right to use the library, laboratories, technical and other documentation necessary for the implementation of the internship program; - the possibility of further employment of graduates (on a general basis if there are vacancies); - the availability of information support for interns regarding the latest technologies used in the industry.
14.	The policy of academic integrity	All tasks related to calculations, drawing up plans and registration of accounting documentation will have individual initial data. Violation of academic integrity in the study of EK " Internal Diseases of Animals " will be considered: academic plagiarism, academic fraud (copying, deception, publishing someone's work for their own), the use of electronic devices during the final control of knowledge. For violations of academic integrity of applicants education may beprosecuted to such academic responsibility : Academic plagiarism – grade 0, recompletion of the task . Academic fraud - cancellation of points ; repeated passage of evaluatingrepeated execution of non-self- performed work on new source data; The use of electronic devices Mr Eid a final control of knowledge - suspension of execution of work , score 0, re- passing the final control.
15.	Keywords	diagnostics, pathogenesis, therapy, prevention, clinical picture, laboratory tests, age characteristics,
16.	Course link in Moodle	https://cdn.snau.edu.ua/moodle/course/view.php?id=3994

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

MLOs: On successful completion of the module the learner will be able to:	PLOs			How assessed
	PLOs 6	PLOs 7	PLOs 8	
MLOs 1. Know the main principles, types and methods of therapy of animals.	+			Referenceabstract
MLOs 2. Be able to predict the development of the disease, prescribe treatment and prevention.Analyze the results obtained during the course of treatment.Understand the importance and responsibility for keeping clinical records of thesupervisingphysician.		+		Reviewbriefcase inand an alyzesituations
MLOs 3. Know the features of the etiology ,pathogenesis, symptoms, as well as the principles of treatment and prevention ofanimal diseases			+	Reviewbriefcase inand an alyzesituations
MLOs 4. Ability to conduct clinical trials to draw conclusions about the condition of animals or to make a diagnosis and totake, pack, record and send samples of biological material for laboratory research.		+		Group tasks, problem solving.
MLOs 5. Be able to develop quarantine and health measures, methods of therapy, diagnosis, treatment and prevention of diseases of various etiologies.	+			Practical test of application skills.
MLOs 6. Know the rules of storage of various pharmaceuticals and biologicals, ways of theirenteral orparenteral use, understand the mechanism of their action, interaction and complex action on the body of animals.Formulate conclusions on the exploitation and treatment of animals of different classes and species, prevention of infectious and non-communicable diseases.		+		Practical test of application skills.
MLOs 7. Know about the dangers of biological waste and dispose of them as required. Prepare and defend an internship report in accordance with the requirements			+	Presentations and report-presentation of the practice report

3. CONTENT OF THE EDUCATIONAL COMPONENT (PROGRAM OF THE COURSE)

Subject . List of issues to be addressed within the topic	Distribution within the total timebudget			Learning resources
	Classroom work		Self-directed study	
	Lectures	Labs		
11 semester				
Topic 13 . Diseases are caused by metabolic disorders . Classification, distribution, features of the course and diagnosis. Study of diseases caused by predominant disorders of protein, carbohydrate and lipid metabolism: ketosis of cows and sheep, myoglobinuria, obesity, alimentary dystrophy. Diseases caused by disorders of macronutrient metabolism : osteodystrophy (alimentary, enzootic, secondary),hypomagnesemia (pasture tetany), postpartumhypophosphatemia . Microelementosis of animals Distribution, general principles of diagnosis and prevention. Iodine deficiency. hypocobaltosis ,hypocuprose , zinc deficiency (paraxratosis ofpiglets), manganese, fluorine,	4	6	30	1, 2, 3, 4, 5, 6, 7, 14

selenium. Excess fluorine, boron, selenium , nickel, strontium andmolybdenum. Hypovitaminosis . Insufficiency of fat-soluble vitamins: A, D, E, K. Insufficiency of water-soluble vitamins: thiamine, riboflavin, nicotinic acid, pyridoxine, cyanocobalamin , ascorbic acid.Hypervitaminosis A and. D. Differential diagnosis, treatment and prevention of animals with metabolic disorders.				
Topic 14 . Diseases of the endocrine organs .Skin diseases . Study of the causes and mechanisms of endocrine diseases. Hypothalamic and pituitary dysfunction .Diabetes mellitus. Diseases of the adrenal glands:hypoadrenocorticism and Cushing's syndrome .Disorders of endocrine function of the pancreas.Diabetes. Diseases of the thyroid gland:hypoparathyroidism , postpartum hypocalcemia .Thyroid diseases: hypothyroidism, endemic goiter, diffuse toxic goiter. Disorders of endocrine function of the thymus . Allergic skin diseases: eczema, urticaria, atonic dermatitis, sputum. Autoimmune skin diseases: vesicular dermatoses, disc-shaped lupus erythematosus . Dermatosparaxia . Differential diagnosis of skin diseases. Diseases of the skin glands: seborrhea, sweat gland dysfunction , pyoderma. Symptoms of skin lesions: alopecia, excessive hair growth, changes in skin and hair pigmentation, itchy skin. Psychogenic skin lesion syndrome.	4	20	30	1, 2, 3, 4, 5, 6, 7
Topic 15 . Diseases of young animals . Spread of diseases in young animals. Features of agephysiology of young animals . And m unny protection of newborn young growth . Immunodeficiency ofyoung animals. Classification of diseases of young animals. Antenatal malnutrition . Acute hypoxia introand - and neonatal periods . Neonatal diseases withdiarrhea syndrome : case in- bezoar disease, colostrumtoxicosis, dyspepsia . Differential diagn osis , treatmentand prevention of gastrointestinal diseases of newbornanimals . Omphalitis and omphalophlebitis . Metaboli c disease of young, Mr. ipohlikemiya, hypoplasticanemia piglets, calves and lambs; D -hypovitaminosis(rickets); white muscle disease of young animals;enzootic ataxia of lambs. Diseases of the digestive system . Periodic tympanic scar in calves and lambs.Bezoar disease .	6	20	30	1, 2, 3, 4, 5, 6, 7
Total	14	46	90	

4. METHODS OF TEACHING AND TEACHING

MLOs	**Teaching methods** (directed study)	hours	**Learning methods** (self-directed study)	hours
MLOs 1.	Lecture, story, explanation, instruction, work with books and other sources . Learning the basic principles, types and shall t o e s use of drugs of different dosage forms . Work with animals / biological		Reading (elaboration of theoretical material). Using the Moodle platform for remote control of material acquisition	

	materials, in a group of 2-3 students			
MLOs 2.	Multimedia lecture, story, explanation, instruction, work with books and other sources. Work with animals / biological materials, in a group of 2-3 students		Solving situational tasks (orally: registration and collection of anamnesis, use of the obtained data for further research of animals). Registration of the synopsis on independent work	
MLOs 3.	Multimedia lecture, story, explanation, instruction, work with books and other sources. Work with animals / biological materials, in a group of 2-3 students		Solving situational tasks (orally: registration and collection of anamnesis, use of the obtained data for further research of animals). Registration of the synopsis on independent work	
MLOs 4.	Demonstration of available equipment and devices, videos, their use during diagnostic, preventive,veterinary and sanitary works.		Solving situational tasks (orally: registration and collection of anamnesis, use of the obtained data for further research of animals). Registration of the synopsis on independent work	
MLOs 5.	Demonstration of available equipment and devices, videos, their use during diagnostic, preventive,veterinary and sanitary works.		Solving situational tasks (orally: registration and collection of anamnesis, use of the obtained data for further research of animals). Registration of the synopsis on independent work	
MLOs 6.	Thematic survey during laboratory (concept of symptom, prognosis, diagnosis, syndrome, fixation of animals, methods of laboratory work. Work with animals / biological materials, in a group of 2-3 students		Solving situational tasks (orally: registration and collection of anamnesis, use of the obtained data for further research of animals). Registration of the synopsis on independent work	
MLOs 7.	Thematic survey during laboratory (concept of symptom, prognosis, diagnosis, syndrome, fixation of animals, methods of laboratory work. Work with animals / biological materials, in a group of 2-3 students		Solving situational tasks (orally: registration and collection of anamnesis, use of the obtained data for further research of animals). Registration of the synopsis on independent work	

5. EVALUATION BY EDUCATIONAL COMPONENT

5.1. Diagnostic evaluation (indicated if necessary)

Computer testing for knowledge of the etiology, pathogenesis, symptoms and pathological signs of major non-communicable diseases and other issues on which the study of internal diseases of animals is based. The grade is not issued.

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
9 semester			
1.	Thematic survey	20 points / 20%	Weekly
2.	Working with animals	10 points / 10%	According to the schedule of the hospital
3.	Solving situational problems	25 points / 25%	According to the schedule
4.	Protection of the abstract from independent work	15 points / 15%	According to the schedule of delivery of modules
5.	Multiple choice tests	15 points / 15%	According to the schedule
6.	Intermediate certification (multiple choice test)	15 points / 15%	according to the schedule
10 semester			
1.	Thematic survey	20 points / 20%	Weekly
2.	Working with animals	10 points / 10%	According to the schedule of the hospital
3.	Solving situational problems	25 points / 25%	According to the schedule
4.	Protection of the abstract from independent work	15 points / 15%	According to the schedule of delivery of modules
5.	Multiple choice tests	15 points / 15%	According to the schedule
6.	Presentation of the internship report	15 points / 15%	according to the schedule
11 semester			
1.	Thematic survey	20 points / 20%	Weekly
2.	Working with animals	10 points / 10%	According to the schedule of the hospital
3.	Solving situational problems	10 points / 10%	According to the schedule
4.	Protection of the abstract from independent work	15 points / 15%	According to the schedule of delivery of modules
5.	Multiple choice tests	15 points / 15%	According to the schedule
6.	Exam	30 points / 30%	In the session

Component	Unsatisfactorily	Satisfactorily	Fine	Perfectly
	<12 points in	*12-15*	*15-18 points*	*20 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 provisionsstudied 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.
	<2 points	*2-5*	*5-8 points*	*10 points*
Working with animals	Task requirements not met	Most requirements are met, but some components are missing or insufficiently disclosed, there is no analysis of other approaches to the issue	All the requirements of the task are met , but in violation of themethods	The task isperformedmethodicallycorrectly and qualitatively .Students in Mierealize thetheoretical position of the discipline in practice
Solving situational problems	The student is not prepared to solve problems, theanswer is incomplete, some components are missing or insufficient to disclose	Using the basic theoretical provisions, the student has difficulty performing the task.Tasks are significantly 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 problems, has suggestions on 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 allows a small number of inaccuracies	The correct answer . P ri performingtasks demonstratedthe ability toindependentlysolve the set task

5.1. Formative assessment:

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

№	Elements of formative assessment	Date
1	Oral questioning by a laboratory (concept symptoms, prognosis, diagnosis , syndrome, fixing animals , methods ofimplementation of laboratory work)	During the lesson

2	Verbal feedback from the teacher Mr. Eid while working ona yrishennya of situation tasks (orally, registration and medical history, use of the data for further study of animals)during the sessions	During the lesson
3	Pysmovmy feedback from teacher Mr. donkey checkcompendium of independent study courses	Within a week, after execution

Self-assessment can be used as an element of summative assessment and formative assessment.

6. LEARNING RESOURCES (LITERATURE)

6.1. The main sources

6.1.1. Textbooks guide

1. Ettinger, S. J., Feldman, E. C., & Côté, E. (2024). Ettinger's Textbook of Veterinary Internal Medicine (9th ed.). St. Louis: Elsevier. 2448 p.
2. Nelson, R. W., & Couto, C. G. (2023). Small Animal Internal Medicine (6th ed.). St. Louis: Mosby. 1440 p.
3. Bruyette, D. S. (Ed.). (2022). Clinical Small Animal Internal Medicine (Vols. 1-2). Hoboken: Wiley-Blackwell. 1488 p.

6.1.2. Methodical support

4. Constable, P. D., Hinchcliff, K. W., Done, S. H., & Grünberg, W. (2017). Veterinary Medicine: A textbook of the diseases of cattle, horses, sheep, pigs, and goats (11th ed.). St. Louis: Elsevier. 2308 p.
5. Smith, B. P., Van Metre, D. C., & Pusterla, N. (Eds.). (2019). Large Animal Internal Medicine (6th ed.). St. Louis: Mosby. 1949 p.
6. Peek, S. F., & Divers, T. J. (2018). Rebhun's Diseases of Dairy Cattle (3rd ed.). St. Louis: Saunders. 704 p.
7. Pugh, D. G., Baird, A. N., Edmondson, M. A., & Passler, T. (2020). Sheep, Goat, and Cervid Medicine (3rd ed.). St. Louis: Elsevier. 561 p. 6.1.3. Other sources
8. http : // zoolife.rv.ua
9. https : // studfiles . no
10. http : // tvarunu . com . ua / tsikave / 130/144 /
11. http : // ukranimals . ru
12. http : // medbib . in . ua

6.2. Additional sources

13. Freeman, K. P., & Klenner, S. (2023). *Veterinary Clinical Pathology: A Case-Based Approach*. Boca Raton: CRC Press. 240 p.
14. Thrall, M. A., Weiser, G., Allison, R. W., & Campbell, T. W. (Eds.). (2022). *Veterinary Hematology and Clinical Chemistry* (3rd ed.). Hoboken: Wiley-Blackwell. 612 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
- https://cdn.snau.edu.ua/moodle/course/view.php?id=3994