COURSE SYLLABUS
«Internal diseases of animals»

Degree of higher education - <u>Master</u>
Specialization <u>211 Veterinary medicine</u>
Educational program «<u>Veterinary medicine</u>»
Academic year <u>4-5</u>**, semester** <u>8-10</u>
Form of education _full-time_
Number of ECTS credits <u>7,3</u>
Language of instruction <u>English</u>

Lecturer of course
Contact information of the lecturer (e-mail)
Course page in eLearn

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https://elearn.nubip.edu.ua/course/view.php?id=2727
https://elearn.nubip.edu.ua/course/view.php?id=2729

DESCRIPTION OF DISCIPLINE

Purpose: the main goal of the discipline "Internal Diseases of Animals" is for students to master important issues of general therapy and prevention of internal diseases of animals, as well as to study internal diseases of animals, to find out their etiology, pathogenesis, symptoms.

Objectives: during studying the discipline "Internal Diseases of Animals", students must acquire knowledge and practical skills regarding the etiology of pathogenesis, patho-anatomical changes, symptoms, diagnosis, course, prognosis, therapy and prevention of non-infectious internal diseases of animals. In the case of studying these issues, it is necessary to deepen the theoretical training on the etiopathogenesis of diseases and animal therapy, to develop in students clinical thinking, a creative approach when solving practical issues on the elimination of animal diseases.

Acquisition of competences:

integrated competency (IC):

− IC 1 Ability to solve complex tasks and problems in the field of veterinary medicine, which involves conducting research and/or implementing innovations and is characterized by the uncertainty of conditions and requirements.

general competences (GC):

− GC 1. Ability to abstract thinking, analysis and synthesis.
− GC 2. Ability to apply knowledge in practical situations.
− GC 3. Knowledge and understanding of the subject field and profession.
− GC 7. Ability to conduct research at the appropriate level.
− GC 8. Ability to learn and master modern knowledge.

- GC 9. Ability to make informed decisions.
- GC 11. Ability to evaluate and ensure the quality of performed works.

professional (special) competences (PC):

- PC 1. The ability to establish the features of the structure and functioning of cells, tissues, organs, their systems and body apparatuses of animals of various classes and species - mammals, birds, insects (bees), fish and other vertebrates.
- PC 2. The ability to use tools, special devices, devices, laboratory equipment and other technical means to carry out the necessary manipulations during the performance of professional activities.
- PC 3. Ability to follow the rules of labor protection, asepsis and antiseptics during professional activities.
- PC 4. The ability to conduct clinical research for the purpose of formulating conclusions about the condition of animals or establishing a diagnosis.
- PC 6. Ability to select, pack, fix and send samples of biological material for laboratory research.
- PC 7. Ability to organize, conduct and analyze laboratory and special diagnostic studies.
- PC 18. Ability to use specialized software tools to perform professional tasks.

Program learning outcomes (PLO):

1. Know and correctly use the terminology of veterinary medicine.

2. Use information from domestic and foreign sources to develop diagnostic, treatment and business strategies.

3. Collect anamnestic data during registration and examination of animals, make decisions regarding the choice of effective methods of diagnosis, treatment and prevention of animal diseases.

COURSE STRUCTURE

Topic	Hours (lecture/laboratory, practical, seminar)	Learning outcomes	Tasks	Assessment
8 semester (4 year)				
Module 1				
Topic 1. Definition of the subject. The main stages of the development of the doctrine of internal	2/4	Know the main principles, types and methods of animal therapy. Be able to predict the development of the disease, prescribe	Submission of laboratory works. Performing independent work	Up to 15 points for completed laboratory work and up to 9 points for completed independent work.

diseases of animals. Principles, types and methods of therapy.		treatment and preventive measures. Analyze the results obtained during the course of treatment. Understand the importance and responsibility for maintaining clinical documentation of the supervising physician. Use the acquired knowledge for further therapeutic activity.	(including elearn).	
Topic 2. General therapy and prevention of internal diseases of animals. Theoretical foundations and practical aspects of dispensation of animals.	2/4	To know the theoretical foundations and practical aspects of dispensation of animals. Be able to draw up a plan of measures for the prevention of internal diseases of animals and organize its implementation. Use the acquired knowledge for further therapeutic activity.	Submission of laboratory works. Performing independent work (including elearn).	Up to 15 points for completed laboratory work and up to 9 points for completed independent work.
Topic 3. Concept of physiotherapy and physiotherapy. Principles and classification of modern methods of physiotherapy.	2/4	Know the principles and classification of modern methods of physiotherapy. Be able to use the means of physiotherapy and physioprophylaxis. Use the acquired knowledge for further therapeutic activity.	Submission of laboratory works. Performing independent work (including elearn).	Up to 15 points for completed laboratory work and up to 9 points for completed independent work.
Testing of module 1			(including elearn)	30
Total of module 1	module			100
Модуль 2				
Topic 4. Diseases of the cardiovascular system. Classification. Spread. General symptoms and	2/4	Know the peculiarities of etiopathogenesis, symptoms, as well as the principles of treatment of animals and	Submission of laboratory works. Performing independent work	Up to 10 points for completed laboratory work and up to 4 points for completed independent work.

syndromes. Diseases of the pericardium.		prevention of pericardial diseases. Be able to choose and dose medicinal drugs according to the diagnosis of the disease, prescribe appropriate diet therapy and exercise for sick animals. Analyze and control the clinical and laboratory parameters of the animal during treatment. Understand the danger of incorrect prescription, overdose and side effects of drugs.	(including elearn).	
Topic 5. Diseases of the myocardium and endocardium.	2/4	Know the peculiarities of etiopathogenesis, symptoms, as well as the principles of animal treatment and prevention of myocardial and endocardial diseases. Be able to choose and dose medicinal drugs according to the diagnosis of the disease, prescribe appropriate diet therapy and exercise for sick animals. Analyze and control the clinical and laboratory parameters of the animal during treatment. Understand the danger of incorrect prescription, overdose and side effects of drugs.	Submission of laboratory works. Performing independent work (including elearn).	Up to 10 points for completed laboratory work and up to 4 points for completed independent work.
Topic 6. Diseases of the respiratory system. Classification and	2/4	Know the peculiarities of etiopathogenesis, symptoms, as	Submission of laboratory works.	Up to 10 points for completed laboratory work and up to 4 points for

distribution. Symptoms and syndromes of respiratory diseases. Diseases of the respiratory tract.		well as the principles of animal treatment and prevention of respiratory tract diseases. Be able to choose and dose medicinal drugs according to the diagnosis of the disease, prescribe appropriate diet therapy and exercise for sick animals. Analyze and control the clinical and laboratory parameters of the animal during treatment. Understand the danger of incorrect prescription, overdose and side effects of drugs.	Performing independent work (including elearn).	completed independent work.
Topic 7. Inflammatory and non-inflammatory lung diseases.	2/4	Know the peculiarities of etiopathogenesis, symptoms, as well as the principles of animal treatment and prevention of lung diseases. Be able to choose and dose medicinal drugs according to the diagnosis of the disease, prescribe appropriate diet therapy and exercise for sick animals. Analyze and control the clinical and laboratory parameters of the animal during treatment. Understand the danger of incorrect prescription,	Submission of laboratory works. Performing independent work (including elearn).	Up to 10 points for completed laboratory work and up to 4 points for completed independent work.

Topic	Hours (lecture/laboratory, practical, seminar)	Learning outcomes	Tasks	Assessment
		overdose and side effects of drugs.		
Topic 8. Diseases of the pleura: pleurisy, hydro- and pneumothorax.	1/2	Know the peculiarities of etiopathogenesis, symptoms, as well as the principles of animal treatment and prevention of pleural diseases. Be able to choose and dose medicinal drugs according to the diagnosis of the disease, prescribe appropriate diet therapy and exercise for sick animals. Analyze and control the clinical and laboratory parameters of the animal during treatment. Understand the danger of incorrect prescription, overdose and side effects of drugs.	Submission of laboratory works. Performing independent work (including elearn).	Up to 10 points for completed laboratory work and up to 4 points for completed independent work.
Testing for module 2			(including elearn)	30
Total for module 2				100
Education work for 8 semestr $(M_1+M_2)/2*0,7$				**70 (≥42)**
Test			(including elearn)	**30**
Total for course				**100**

5 year

Topic	Hours (lecture/laboratory, practical, seminar)	Learning outcomes	Tasks	Assessment
9 semester (5 year)				
Модуль 1				
Topic 1. Diseases of the digestive system. Classification, distribution, symptoms and syndromes of diseases of the digestive system.	2/6	Know the peculiarities of etiopathogenesis, symptoms, as well as the principles of animal treatment and prevention for digestive diseases. To be able to choose and dose medicines according to the diagnosis of the	Submission of laboratory works. Performing independent work (including elearn).	Up to 12 points for completed laboratory work and up to 6 points for completed independent work.

		disease, to prescribe appropriate diet therapy for sick animals. Analyze and control the clinical and laboratory parameters of the animal during treatment. Understand the danger of incorrect prescription, overdose and side effects of drugs.		
Topic 2. Stomach and intestinal diseases with colic syndrome. Classification, main symptoms, principles of diagnosis and treatment of sick animals with colic syndrome.	2/6	Know the peculiarities of etiopathogenesis, symptoms, as well as the principles of animal treatment and prevention of diseases of the stomach and intestines with colic syndrome. To be able to choose and dose medicines according to the diagnosis of the disease, to prescribe appropriate diet therapy for sick animals. Analyze and control the clinical and laboratory parameters of the animal during treatment. Understand the danger of incorrect prescription, overdose and side effects of drugs.	Submission of laboratory works. Performing independent work (including elearn).	Up to 12 points for completed laboratory work and up to 6 points for completed independent work.

Topic 3. Diseases of the stomach and intestines: gastritis, peptic ulcer, gastroenteritis, gastroenterocolitis.	2/6	Know the peculiarities of etiopathogenesis, symptoms, as well as the principles of treatment of animals and prevention of diseases of the stomach and intestines. To be able to choose and dose medicines according to the diagnosis of the disease, to prescribe appropriate diet therapy for sick animals. Analyze and control the clinical and laboratory parameters of the animal during treatment. Understand the danger of incorrect prescription, overdose and side effects of drugs.	Submission of laboratory works. Performing independent work (including elearn).	Up to 12 points for completed laboratory work and up to 5 points for completed independent work.
Topic 4. Diseases of the liver and pancreas.	2/6	Know the peculiarities of etiopathogenesis, symptoms, as well as the principles of treatment of animals and prevention of diseases of the liver and pancreas. To be able to choose and dose medicines according to the diagnosis of the disease, to prescribe appropriate diet therapy for sick animals. Analyze and	Submission of laboratory works. Performing independent work (including elearn).	Up to 12 points for completed laboratory work and up to 5 points for completed independent work.

			control the clinical and laboratory parameters of the animal during treatment. Understand the danger of incorrect prescription, overdose and side effects of drugs.		
Testing of module 1				(include elearn)	30
Total for module 1					100
Module 2					
Topic 5. Diseases caused by metabolic disorders. Classification, distribution, features of the course and diagnosis. Ketosis.	2/6		To know the peculiarities of etiopathogenesis, symptoms, as well as the principles of treatment of animals and prevention of diseases caused by a predominant violation of protein, carbohydrate and lipid metabolism. Be able to choose and dose medicinal drugs according to the diagnosis of the disease, prescribe appropriate diet therapy and exercise for sick animals. Analyze and control the clinical and laboratory parameters of the animal during treatment. Understand the danger of incorrect prescription, overdose and	Submission of laboratory works. Performing independent work (including elearn).	Up to 12 points for completed laboratory work and up to 6 points for completed independent work.

		side effects of drugs.		
Topic 6. Diseases caused by disturbances in the metabolism of macroelements.	2/6	Know the peculiarities of etiopathogenesis, symptoms, as well as the principles of animal treatment and prevention of diseases caused by disturbances in the metabolism of macroelements. To be able to choose and dose medicines according to the diagnosis of the disease, to prescribe appropriate diet therapy for sick animals. Analyze and control the clinical and laboratory parameters of the animal during treatment. Understand the danger of incorrect prescription, overdose and side effects of drugs.	Submission of laboratory works. Performing independent work (including elearn).	Up to 12 points for completed laboratory work and up to 6 points for completed independent work.
Topic 7. Microelementoses of animals. Distribution, general principles of diagnosis and prevention.	2/6	Know the peculiarities of etiopathogenesis, symptoms, as well as the principles of animal treatment and prevention of diseases caused by disturbances in the metabolism of microelements and vitamins. To be able to choose and dose medicines according to the	Submission of laboratory works. Performing independent work (including elearn).	Up to 12 points for completed laboratory work and up to 6 points for completed independent work.

		diagnosis of the disease, to prescribe appropriate diet therapy for sick animals. Analyze and control the clinical and laboratory parameters of the animal during treatment. Understand the danger of incorrect prescription, overdose and side effects of drugs.		
Topic 8. Diseases of the endocrine system. Causes and mechanisms of development.	1/3	Know the peculiarities of etiopathogenesis, symptoms, as well as the principles of animal treatment and prevention of endocrine diseases. To be able to choose and dose medicines according to the diagnosis of the disease, to prescribe appropriate diet therapy for sick animals. Analyze and control the clinical and laboratory parameters of the animal during treatment. Understand the danger of incorrect prescription, overdose and side effects of drugs.	Submission of laboratory works. Performing independent work (including elearn).	Up to 12 points for completed laboratory work and up to 6 points for completed independent work.
Test of module 2			(including elearn)	30
Total for module 2				100

Education work for 9 semester $(M_1+M_2)/2*0{,}7$				70 (≥42)
Test			(including elearn)	**30**
Total for course				**100**
Topic	**Hours** (lecture/laboratory, practical, seminar)	**Learning outcomes**	**Tasks**	**Assessment**
10 semester (5 year)				
Module 1				
Topic 1. Diseases of young animals. Classification and spread of diseases of young animals.	2/6	Know the peculiarities of etiopathogenesis, symptoms, as well as the principles of animal treatment and prevention of young animals diseases. To be able to choose and dose medicines according to the diagnosis of the disease, to prescribe appropriate diet therapy for sick animals. Analyze and control the clinical and laboratory parameters of the animal during treatment. Understand the danger of incorrect prescription, overdose and side effects of drugs.	Submission of laboratory works. Performing independent work (including elearn).	Up to 12 points for completed laboratory work and up to 6 points for completed independent work.
Topic 2. Kidney diseases. Principles of therapy and prevention.	2/6	Know the peculiarities of etiopathogenesis, symptoms, as well as the principles of animal treatment and prevention of kidney diseases. To be able to choose and dose medicines according to the	Submission of laboratory works. Performing independent work (including elearn).	Up to 12 points for completed laboratory work and up to 6 points for completed independent work.

		diagnosis of the disease, to prescribe appropriate diet therapy for sick animals. Analyze and control the clinical and laboratory parameters of the animal during treatment. Understand the danger of incorrect prescription, overdose and side effects of drugs.		
Topic 3. Disease of urinary tract. Urolithiasis. Distribution, general principles of diagnosis and therapy.	2/6	Know the peculiarities of etiopathogenesis, symptoms, as well as the principles of animal treatment and prevention of urinary tract diseases. To be able to choose and dose medicines according to the diagnosis of the disease, to prescribe appropriate diet therapy for sick animals. Analyze and control the clinical and laboratory parameters of the animal during treatment. Understand the danger of incorrect prescription, overdose and side effects of drugs.	Submission of laboratory works. Performing independent work (including elearn).	Up to 12 points for completed laboratory work and up to 5 points for completed independent work.
Topic 4. Diseases of the blood system. Spreading and	2/6	To know the peculiarities of etiopathogenesis, symptoms, as	Submission of laboratory works.	Up to 12 points for completed laboratory work and

principles of diagnostics and treatment.		well as the principles of treatment of blood diseases. To be able to choose and dose medicines according to the diagnosis of the disease, to prescribe appropriate diet therapy for sick animals. Analyze and control the clinical and laboratory parameters of the animal during treatment. Understand the danger of incorrect prescription, overdose and side effects of drugs.	Performing independent work (including elearn).	up to 5 points for completed independent work.
Testing of module 1			(including elearn)	30
Total for module 1				100
Module 2				
Topic 5. Diseases of the nervous system. Spreading and principles of diagnostics and treatment.	2/6	Know the peculiarities of etiopathogenesis, symptoms, as well as the principles of animal treatment and prevention of functional diseases of the nervous system. Be able to choose and dose medicines according to the diagnosis of the disease. Analyze and control the clinical and laboratory parameters of the animal during treatment.	Submission of laboratory works. Performing independent work (including elearn).	Up to 12 points for completed laboratory work and up to 6 points for completed independent work.

		Understand the danger of incorrect prescription, overdose and side effects of drugs.		
Topic 6. Functional diseases of the nervous system in animals. Distribution, general principles of diagnosis and therapy.	2/6	Know the peculiarities of etiopathogenesis, symptoms, as well as the principles of animal treatment and prevention of functional diseases of the nervous system. Be able to choose and dose medicines according to the diagnosis of the disease. Analyze and control the clinical and laboratory parameters of the animal during treatment. Understand the danger of incorrect prescription, overdose and side effects of drugs.	Submission of laboratory works. Performing independent work (including elearn).	Up to 12 points for completed laboratory work and up to 6 points for completed independent work.
Topic 7. Allergic and autoimmune diseases of animal skin. General characteristics, methods of diagnosis and treatment.	2/6	Know the peculiarities of etiopathogenesis, symptoms, as well as the principles of animal treatment and prevention of skin diseases. To be able to choose and dose medicines according to the diagnosis of the disease, to prescribe appropriate diet therapy for sick animals. Analyze and control the	Submission of laboratory works. Performing independent work (including elearn).	Up to 12 points for completed laboratory work and up to 6 points for completed independent work.

		clinical and laboratory parameters of the animal during treatment. Understand the danger of incorrect prescription, overdose and side effects of drugs.		
Topic 8. Diseases of fur animals.	1/3	To know the peculiarities of etiopathogenesis, symptoms, as well as the principles of treatment of fur animals and prevention of their diseases. To be able to choose and dose medicines according to the diagnosis of the disease, to prescribe appropriate diet therapy for sick animals. Analyze and control the clinical and laboratory parameters of the animal during treatment. Understand the danger of incorrect prescription, overdose and side effects of drugs.	Submission of laboratory works. Performing independent work (including elearn).	Up to 12 points for completed laboratory work and up to 6 points for completed independent work.
Testing of module 2			(including elearn)	30
Total of module 2				100
Education work for 10 semester $(M_1+M_2)/2*0,7$				**70 (≥42)**
Exam			(including elearn)	**30**
Total of course				**100**

ASSESSMENT POLICY

Policy regarding deadlines and resits:	Works that are submitted late without good reason will be assigned a lower grade. Modules can be rearranged with the permission of the lecturer if there are good reasons (for example, sick leave).
Academic honesty policy:	Writing off during tests, assessments and exams is prohibited (including using mobile devices).
Attendance policy:	Attending classes is mandatory. For objective reasons (for example, illness, international internship), training can take place individually (in online form with the agreement of the dean of the faculty).

SCALE OF ASSESSMENT OF STUDENT KNOWLEDGE

Student rating, points	National grade based on exam results	
	exams	Credits
90-100	excellent	Passed
74-89	good	
60-73	satisfactory	
0-59	unsatisfactory	not passed

Recommended sources of information
Basic

1. Stephen J. Ettinger, Edward C. Feldman Textbook of Veterinary Internal Medicine. Elsevier Health Sciences, 2010. 2424 p.

2. Stephen J. Ettinger, Edward C. Feldman, Etienne Cote Textbook of Veterinary Internal Medicine. Elsevier Health Sciences, 2016. 2736 p.

3. Blackwell's Five-Minute Veterinary Consult: Laboratory Tests and Diagnostic Procedures: Canine and Feline / Joyce S. Knoll, et al. John Wiley & Sons, 2011. 816 p.

4. Handbook For The Veterinary Practitioner: Select Topics in Canine and Feline Emergency Medicine / Dr. Fabienne Dethioux, et al. Royal Canin, 2007. 200 p.

Secondary

1. R.A. McPherson, M.R. Pincus Henry's Clinical diagnosis and management by laboratory methods. Elsevier. 2022. 1663 p.

2. Richard W. Nelson, C. Guillermo Couto Small Animal Internal Medicine. Elsevier; 6th edition, 2019. 1608 p.

3. Leah Cohn, Etienne Cote Cote's Clinical Veterinary Advisor: Dogs and Cats. Mosby, 2019. 1680 p.

4. Mary C. Smith, David M. Sherman Goat Medicine, 2nd Edition. Wiley-Blackwell, 2009. 888 p.

Information resourses

1. http://dspace.nubip.edu.ua:8080/jspui/ – Electronic library of NUBiP of Ukraine
2. http://www.nbuv.gov.ua/e-journals/nd/ – Scientific reports of the National University of Bioresources and Nature Management of Ukraine
3. http://www.nbuv.gov.ua/ – National Library of Ukraine named after V.I. Vernadskyi
4. https://www.merckvetmanual.com/Merck Veterinary Manual