NATIONAL UNIVERSITY OF LIFE AND ENVIRONMENTAL SCIENCES OF UKRAINE

Department of Internal Animal Diseases

"CONFIRMED"
Faculty of veterinary medicine
"____" _____ 2026

CURRICULUM OF ACADEMIC DISCIPLINE
«INTERNAL DISEASES OF ANIMALS»

Field of knowledge 21 «Veterinaria»

Specialty 211 – «Veterinary medicine» _
Academic programme Veterinary medicine
Faculty of Veterinary Medicine

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Description in the course Internal diseases of animals

The purpose of the educational discipline "Special propaedeutics, therapy and prevention of internal diseases of animals" is to improve and deepen theoretical knowledge and obtain practical skills in the recognition of internal diseases of animals, organization of preventive and therapeutic measures depending on the chosen direction, as well as to prepare the master's student for independent work in the chosen discipline.

Area of knowledge, specialty, academic programme, academic degree		
Academic degree	Master	
Specialty	211 – «Veterinaria»	
Academic programme	«Veterinary medicine»	
Characteristics of the course		
Type	Compulsory	
Total number of hours	240	
Number of ECTS credits	8	
Number of modules	6	
Course project (work) (if any)	–	
Form of assessment	Credit, Credit, Examination	
Indicators of the discipline for full-time and part-time forms of university study		
	University study	
	Full-time	**Part-time form of study**
Year of study	4–5	–
Term	7, 8, 9	–
Lectures s	45 hr.	–
Practical clases and seminars	–	–
Laboratory classes	135 hr.	–
Self-study	60 hr.	–
Number of hours per week for full-time students	3, 4, 5 hours	

1. Aim, objectives, competences and expected learning outcomes of the discipline

Aim: 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.

List of courses that must be completed prior to taking "Internal Diseases of Animals": *Anatomy of Domestic Animals, Animal Physiology and Pathophysiology, Veterinary Pharmacology, Veterinary Clinical Biochemistry, Clinical Diagnosis of Animal Diseases.*

Competences acquired:

Integral competence (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 competence (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.
- GC 13. Ability to make decisions and take action while adhering to the principle that corruption and any other forms of misconduct are unacceptable.

Special (professional) competence (SC):

- SC 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.
- SC 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.
- SC 3. Ability to follow the rules of labor protection, asepsis and antiseptics during professional activities.
- SC 4. The ability to conduct clinical research for the purpose of formulating conclusions about the condition of animals or establishing a diagnosis.
- SC 6. Ability to select, pack, fix and send samples of biological material for laboratory research.
- SC 7. Ability to organize, conduct and analyze laboratory and special diagnostic studies.
- SC 8. Ability to use specialized software tools to perform professional tasks.

Expected Learning outcomes (ELO):

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

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

ELO 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.

ELO 5. Establish a link between the clinical manifestations of a disease and laboratory test results.

ELO 6. Develop quarantine and public health measures, as well as methods for the therapy, prevention, diagnosis, and treatment of diseases of various etiologies.

ELO 19. Conduct educational activities among industry professionals and the general public.

First day conpetences

1. Act in a way that shows understanding of the ethical and legal framework within which veterinarians should work, including professional-, animal welfare-, client-, public health-, societal- and environmental -related aspect.

4. Promote, monitor and contribute to maintaining health and safety of oneself, patients, clients, colleagues and the environment in the veterinary setting; demonstrate knowledge about the principles of quality assurance; apply principles of risk management in practice.

7. Prepare accurate clinical and client records, and case reports when necessary, in a form satisfactory to the relevant audiences.

8. Work effectively as a member of a multi-disciplinary team in the delivery of services and recognise the contribution of all team members.

9. Be able to review and evaluate literature and presentations critically.

10. Understand and apply principles of One Health to ensure veterinary Good Clinical Practice, and research-based and evidence-based veterinary medicine.

11. Demonstrate ability to critically analyse evidence, cope with incomplete information, deal with contingencies, and adapt knowledge and skills to varied scenarios and contexts.

16. Obtain an accurate and relevant history of the individual animal or animal group, and its/their husbandry and environment.

19. Develop appropriate treatment plans and administer treatment in the interests of the animals under their care with regard to the resources available and to appropriate public health and environmental considerations.

20. Attend in an emergency and perform first aid in common animal species. Prioritise situational urgency and allocate resources accordingly.

24. Use basic diagnostic equipment and carry out an examination effectively as appropriate to the case, in accordance with good health and safety practice and current regulations. Understand the contribution of digital tools and artificial intelligence in veterinary medicine.

27.Prescribe and dispense medicines correctly and responsibly in accordance with legislation and latest guidance.

28. Advise on and implement preventive and eradication programmes appropriate to the disease and species, in line with accepted animal health, animal welfare, public health and environmental health standards.

2. Programme and structure of the discipline

Names of modules and topics	Number of hours						
	Full-time form						
	weeks	total	Also include				
			l	p	lab	ind	self
1	2	2	3	4	5	6	7
Module 1. ***General Therapy.***							
Topic 1. Definition of the subject. The main stages of the development of the doctrine of internal diseases of animals. Principles, types and methods of therapy.	1-2	8	2		4		4
Topic 2. General therapy and prevention of internal diseases of animals. Theoretical foundations and practical aspects of dispensation of animals. Therapeutic technique.	3-4	8	2		4		4
Topic 3. Concept of physiotherapy and physiotherapy. Principles and classification of modern methods of physiotherapy.	5-6	8	2		4		4
Total for module 1		30	6		12		12
Module 2. ***Diseases of cardiovascular and pulmonary system.***							
Topic 4. Diseases of the cardiovascular system. Classification. Spread. General symptoms and syndromes. Diseases of the pericardium.	7-8	9	2		4		4
Topic 5.Diseases of the myocardium and endocardium.	9-10	9	2		4		4
Topic 6. Diseases of the respiratory system. Classification and distribution. Symptoms and syndromes of respiratory diseases. Diseases of the respiratory tract.	11-12	9	2		4		4
Topic 7. Inflammatory and non-inflammatory lung diseases.	13-14	9	2		4		4
Topic 8. Diseases of the pleura: pleurisy, hydro- and pneumothorax.	15	5	1		2		2
Total for module 2		45	9		18		18
Total hours		75	15		30		30
Module 1. ***Diseases of digestive system***							
Topic 1. Diseases of the digestive system. Classification, distribution, symptoms and syndromes of diseases of the digestive system.	1-2	12	2		6		6
Topic 2. Stomach and intestinal diseases with colic syndrome. Classification, main symptoms, principles of diagnosis and treatment of sick animals with colic syndrome.	3-4	8	2		6		
Topic 3. Diseases of the stomach and intestines: gastritis, peptic ulcer, gastroenteritis, gastroenterocolitis.	5-6	12	2		6		7
Topic 4. Diseases of the liver and pancreas.	7-8	8	2		6		
Total for module 1		45	8		24		13
Module 2. ***Diseases caused by methabolic diseases***							
Topic 5. Diseases caused by metabolic disorders. Classification, distribution, features of the course and diagnosis. Ketosis.	9-10	9	2		6		1

Topic 6. Diseases caused by disturbances in the metabolism of macroelements.	11-12	8	2		6		
Topic 7. Microelementoses of animals. Distribution, general principles of diagnosis and prevention.	13-14	9	2		6		1
Topic 8. Diseases of the endocrine system. Causes and mechanisms of development.	15	4	1		3		
Total for module 2		30	7		21		2
Total hours		75	15		45		15
5 year of education 10 semester							
Module 1. ***Diseases of young animals, urinary and blood system***							
Topic 1. Diseases of young animals. Classification and spread of diseases of young animals.	1-2	14	2		6		6
Topic 2. Kidney diseases. Principles of therapy and prevention.	3-4	8	2		6		
Topic 3. Disease of urinary tract. Urolithiasis. Distribution, general principles of diagnosis and therapy.	5-6	15	2		6		7
Topic 4. Diseases of the blood system. Spreading and principles of diagnostics and treatment.	7-8	8	2		6		
Total module 1		45	8		24		13
Module 2. ***Diseases of nervous system, skin and fury animals***							
Topic 5. Diseases of the nervous system. Spreading and principles of diagnostics and treatment.	9-10	13	2		6		5
Topic 6. Functional diseases of the nervous system in animals. Distribution, general principles of diagnosis and therapy.	11-12	8	2		6		
Topic 7. Allergic and autoimmune diseases of animal skin. General characteristics, methods of diagnosis and treatment.	13-14	13	2		6		5
Topic 8. Diseases of fur animals.	15	11	1		3		7
Total for module 2		45	7		21		17
Total hours		90	15		45		20

3. Topics of lectures

№ order	Name of topics	Hours
4 year of education, 7 semester		
1.	Introduction lecture. Definition of the subject. The main stages of the development of the doctrine of internal diseases of animals. Principles, types and methods of therapy.	2
2.	General therapy and prevention of internal diseases of animals. Theoretical foundations and practical aspects of dispensation of animals.	2
3.	Concept of physiotherapy and physiotherapy. Principles and classification of modern methods of physiotherapy.	2
4.	Diseases of the cardiovascular system. Classification. Spread. General symptoms and syndromes. Diseases of the pericardium.	2

5.	Diseases of the myocardium and endocardium.	2
6.	Diseases of the respiratory system. Classification and distribution. Symptoms and syndromes of respiratory diseases. Diseases of the respiratory tract.	2
7.	Inflammatory and non-inflammatory lung diseases.	2
8.	Diseases of the pleura: pleurisy, hydro- and pneumothorax.	1
4 year of education, 8 semester		
9.	Diseases of the digestive system. Classification, distribution, symptoms and syndromes of diseases of the digestive system. Diseases of the stomachs of ruminants.	2
10.	Stomach and intestinal diseases with colic syndrome. Classification, main symptoms, principles of diagnosis and treatment of sick animals with colic syndrome.	2
11.	Diseases of the stomach and intestines: gastritis, peptic ulcer, gastroenteritis, gastroenterocolitis.	2
12.	Diseases of the liver and biliary tract. Classification, distribution, main syndromes of diseases of the liver and biliary tract. Hepatitis, hepatodystrophy.	2
13.	Diseases caused by metabolic disorders. Classification, distribution, features of the course and diagnosis. Ketosis.	2
14.	Diseases caused by disturbances in the metabolism of macroelements. Osteodystrophy, hypomagnesemia, postpartum hypophosphatemia.	2
15.	Microelementoses of animals. Distribution, general principles of diagnosis and prevention.	2
16.	Diseases of the endocrine system. Causes and mechanisms of development. Diseases of the thyroid, parathyroid and adrenal glands.	1
5 year of education, 9 semester		
17.	Diseases of young animals. Classification and spread of diseases of young animals. Peculiarities of the age-related physiology of young animals. Immunodeficient condition of young animals. Antenatal hypotrophy.	2
18.	Classification, distribution and main syndromes of kidney and urinary tract diseases. Principles of therapy and prevention.	2
19.	Urolithiasis. Distribution, general principles of diagnosis and therapy.	2
20.	Diseases of the blood system. Classification. Spreading. Anemias: classification, etiology, methods of diagnosis and treatment.	2
21.	Diseases of the nervous system. Classification, distribution, general syndromes and diagnosis of diseases of the nervous system.	2

22.	Functional diseases of the nervous system in animals. Distribution, general principles of diagnosis and therapy.	2
23.	Allergic and autoimmune diseases of animal skin. General characteristics, methods of diagnosis and treatment.	2
24.	Diseases of fur animals. Biological features of fur animals. Distribution, diagnosis and prevention of internal diseases of fur animals.	1

4. Topics of laboratory classes

№ order	Name of topics	Hours
4 year of education, 8 semester		
25.	**№ 1.** Personal hygiene, safety techniques during research and treatment of animals. Clinical documentation.	2
26.	**№ 2.** Therapeutic technique. Individual and group methods of drug administration. External methods of drug use.	2
27.	**№ 3.** Enteral methods of drug administration. Enemas	2
28.	**№ 4.** Parenteral administration of drugs. Introduction of medicinal substances into respiratory organs: inhalation, aerosol therapy and aerosol prophylaxis.	2
29.	**№ 5.** Etiotropic and pathogenetic therapy. Novocaine blocks, anti-stress therapy, reflexology. Non-specific stimulation therapy.	2
30.	**№ 6.** Physiotherapy. Mechanism of action, indications, method of application of photo-, electro-, hydro- and mechanotherapy.	2
31.	**№ 7.** Clinical-laboratory and special research methods of thematically sick animals in a clinic with pathology of the cardiovascular system.	2
32.	**№ 8.** Diagnosis, treatment and prevention of myocardial diseases.	2
33.	**№ 9.** Diagnosis, treatment and prevention of pericardial diseases.	2
34.	**№ 10.** Diagnosis, treatment and prevention of endocardial diseases and heart defects.	2
35.	**№ 11.** Clinical-laboratory and special research methods of thematically sick animals in a clinic with pathology of the respiratory organs.	2
36.	**№ 12.** Diagnosis, treatment and prevention of diseases of the respiratory tract.	2
37.	**№ 13.** Diagnosis, treatment and prevention of pneumonia in animals.	2
38.	**№ 14.** Diagnosis, treatment and prevention of non-inflammatory lung diseases: emphysema, pulmonary edema,	2

	pulmonary hemorrhage.	
39.	**№ 15.** Differential diagnosis, treatment and prevention of pleural diseases: pleurisy, hydro- and pneumothorax.	2
5 year of education, 9 semester		
40.	**№ 1.** Clinical laboratory and special methods of research, treatment and prevention of diseases of the digestive system.	4
41.	**№ 2.** Diagnosis, treatment and prevention of diseases of the oral cavity, pharynx and esophagus.	2
42.	**№ 3.** Diagnosis, treatment and prevention of ruminant foregut diseases.	4
43.	**№ 4.** Diagnosis, treatment and prevention of diseases of the stomach and intestines with colic syndrome. Enteralgia, expansion of the stomach, intestinal flatulence. Chemo- and coprostasis.	2
44.	**№ 5.** Diagnosis, treatment and prevention of diseases of the stomach and intestines: gastritis, gastroenteritis, peptic ulcer disease.	4
45.	**№ 6.** Diagnosis, treatment and prevention of diseases of the peritoneum (peritonitis, ascites).	2
46.	**№ 7.** Clinical laboratory and special methods of research, treatment and prevention of diseases of the liver and biliary tract.	4
47.	**№ 8.** Clinical laboratory and special methods of research and treatment for diseases of the pancreas.	2
48.	**№ 9.** Clinical laboratory and special methods of research of metabolic diseases in a clinic with thematically sick animals.	4
49.	**№ 10.** Diagnosis, treatment and prevention of diseases caused by a predominant disorder of protein, carbohydrate and lipid metabolism.	2
50.	**№ 11.** Clinical-laboratory and special research methods for disturbances in the metabolism of macroelements in animals.	4
51.	**№ 12.** Differential diagnosis, therapy and prevention of macronutrient metabolism disorders in animals	2
52.	**№ 13.** Diagnosis, treatment and prevention of animal microelement diseases.	4
53.	**№ 14.** Diagnosis, treatment and prevention of diseases caused by vitamin metabolism disorders.	2
54.	**№ 15.** Clinical laboratory and special methods of research, treatment and prevention of diseases of the endocrine system.	3
5 year of education, 10 semester		
55.	**№ 1.** Diagnosis, treatment and prevention of neonatal diseases of young animals: hypoglycemia, casein-bezoar disease, colostrum toxicosis, dyspepsia of newborns.	4
56.	**№ 2.** Diagnosis, treatment and prevention of postnatal	2

	diseases of young animals: hypoplastic anemia, parakeratosis of piglets, periodic tympany of calves, bezoar disease, white muscle disease, enzootic ataxia of lambs.	
57.	**№ 3.** Clinical-laboratory and special research methods of thematically sick animals in the clinic with diseases of the urinary system.	4
58.	**№ 4.** Clinical laboratory and special methods of research, treatment and prevention of kidney diseases.	2
59.	**№ 5.** Clinical laboratory and special methods of research, treatment and prevention of diseases of the urinary tract.	4
60.	**№ 6.** Differential diagnosis, treatment and prevention of urolithiasis (urolithiasis).	2
61.	**№ 7.** Clinical and hematological diagnosis, therapy and prevention of anemias: posthemorrhagic, hypoplastic, hemolytic.	4
62.	**№ 8.** Diagnosis, therapy and prevention of diseases with hemostasis disorders. Hemorrhagic diatheses.	2
63.	**№ 9.** Clinical-laboratory and special research methods of thematically sick animals with diseases of the nervous system.	4
64.	**№ 10.** Diagnosis, therapy and prevention of diseases of the brain and spinal cord and their membranes.	2
65.	**№ 11.** Functional nervous diseases. Epilepsy, eclampsia and neuroses.	4
66.	**№ 12.** Stress syndrome in animals and its prevention.	2
67.	**№ 13.** Diagnostic methods and general principles of animal treatment for allergic diseases.	4
68.	**№ 14.** Diagnosis, treatment and prevention of skin diseases and their derivatives. Sweat gland dysfunction. Autoimmune skin diseases.	2
69.	**№ 15.** Clinical laboratory and special methods of research, treatment and prevention of non-contagious diseases of fur animals	3

5. Topics of self-study

№	Topic title	Hours
1	Common prophylaxys of internal diseases of animals. Analisys of keeping animals	12
2	Metal indication of reticulum and entering of magnetic rings	4
3	Vascular diseases: arteriosclerosis and thrombosis. Assignment	12
4	Diagnostics, therapy and profilaxys of bronchial asthma in animals	6

5	Analisys of clinical-laboratory and special methods of mesearument animals with diseases of digestive system	4
6	Mechanical and dynamic intestinal obstruction. Thromboembolism of mesenteric arteries.	9
7	Analysis of clinical-laboratory and special methods of research on animals caused by a predominant disorder of protein, carbohydrate and lipid metabolism.	7
8	Analysis of clinical-laboratory and special methods of animal research for macronutrient metabolism disorders.	8
9	Analysis of clinical-laboratory and special methods of research on animals caused by kidney and urinary system disorders.	6
10	Analisys of clinical-laboratory and special methods of mesearument animals with diseases of blood system.	7
11	Analisys of clinical-laboratory and special methods of mesearument animals with diseases of nervous system.	5
12	Analisys of clinical-laboratory and special methods of mesearument animals with allergic diseases.	5
13	Metabolic diseases of fur animals.	7

6. Methods of assessing expected learning outcomes:

- verbal method (lecture, explanation, discussion, instruction, conversation);
- practical method (laboratory, practical classes, statistical processing);
- visual method (explanation, discussion, instruction, conversation);
- work with educational and methodical literature (summarizing, summarizing, annotating, reviewing, writing an essay);
- video method (distance, multimedia, web-oriented classes);
- independent work (task performance).

7. Teaching methods:

- problem-based learning method;
- practice-oriented learning method;
- case study method;
- project-based learning method;
- flipped classroom, blended learning method;
- learning through research method;
- teaching through discussion and debate method;
- method of educational discussions and debates;
- method of teamwork,
- brainstorming;
- method of gamified learning.

8. Results assessment

The assessment of higher education applicants' knowledge is based on a 100-point scale and is converted into a national grade in accordance with the current 'Regulations on Examinations and Tests at the National University of Life and Environmental Sciences of Ukraine'.

8.1 Distribution of points by type of educational activity

Form of teaching activity	Results of teaching	Assessment
4 year of education, 8 semestr		
Module 1. **General Therapy.**		
Topic 1. **Definition of the subject. The main stages of the development of the doctrine of internal diseases of animals. Principles, types and methods of therapy.**		
Lection 1. Introduction lecture. Definition of the subject. The main stages of the development of the doctrine of internal diseases of animals. Principles, types and methods of therapy.	Know the main principles, types and methods of animal therapy. Be able to predict the development of the disease, prescribe 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.	**-**
Laboratory work 1. Personal hygiene, safety techniques during research and treatment of animals. Clinical documentation.		**10**
Laboratory work 2. Therapeutic technique. Individual and group methods of drug administration. External methods of drug use.		**10**
Self work 1. Common prophylaxys of internal diseases of animals. Analisys of keeping animals.		**2**
Topic 2. **General therapy and prevention of internal diseases of animals. Theoretical foundations and practical aspects of dispensation of animals. Therapeutic technique**		
Lection 2. General therapy and prevention of internal diseases of animals. Theoretical foundations and practical aspects of dispensation of animals.	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.	**-**
Laboratory work 3. Enteral methods of drug administration. Enemas.		**10**
Laboratory work 4. Parenteral administration of drugs. Introduction of medicinal substances into respiratory organs: inhalation, aerosol therapy and aerosol prophylaxis.		**10**
Self work 2. Metal indication of reticulum and entering of magnetic rings.		**5**
Topic 3. **Concept of physiotherapy and physiotherapy. Principles and classification of modern methods of physiotherapy.**		
Lection 3. Concept of physiotherapy and physiotherapy. Principles and classification of modern methods of physiotherapy.	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.	-
Laboratory work 5. Etiotropic and pathogenetic therapy. Novocaine blocks, anti-stress therapy, reflexology. Non-specific stimulation therapy.		**10**
Laboratory work 6. Physiotherapy. Mechanism of action, indications, method of application of photo-, electro-, hydro- and mechanotherapy.		**10**
Module control work 1.		**30**
Total for module 1		**100**
Module 2. **Diseases of cardiovascular and pulmonary system.**		
Topic 4. **Diseases of the cardiovascular system. Classification. Spread. General symptoms and syndromes. Diseases of the pericardium.**		
Lection 4. Diseases of the cardiovascular system. Classification. Spread. General symptoms and syndromes. Diseases of the pericardium.	Know the peculiarities of etiopathogenesis, symptoms, as well as the principles of treatment of animals and prevention of pericardial diseases. Be able to choose and dose medicinal drugs according to the diagnosis of the disease, prescribe appropriate	**-**
Laboratory work 7. Clinical-laboratory and special research methods of thematically sick		**5**

animals in a clinic with pathology of the cardiovascular system.	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.	
Laboratory work 8. Diagnosis, treatment and prevention of myocardial diseases.		**5**
Topic 5. **Diseases of the myocardium and endocardium.**		
Lection 5 Diseases of the myocardium and endocardium.	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.	**-**
Laboratory work 9. Diagnosis, treatment and prevention of pericardial diseases.		**5**
Laboratory work 10. Diagnosis, treatment and prevention of endocardial diseases and heart defects.		**5**
Self work 3. Vascular diseases: arteriosclerosis and thrombosis. Assignment		**2**
Topic 6. **Diseases of the respiratory system. Classification and distribution. Symptoms and syndromes of respiratory diseases. Diseases of the respiratory tract**		
Lecture 6 Diseases of the respiratory system. Classification and distribution. Symptoms and syndromes of respiratory diseases. Diseases of the respiratory tract.	Know the peculiarities of etiopathogenesis, symptoms, as 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.	**-**
Laboratory work 11 Clinical-laboratory and special research methods of thematically sick animals in a clinic with pathology of the respiratory organs.		**10**
Laboratory work 12 Diagnosis, treatment and prevention of diseases of the respiratory tract.		**10**
Topic 7. **Inflammatory and non-inflammatory lung diseases.**		
Lecture 7 Inflammatory and non-inflammatory lung diseases.	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, overdose and side effects of drugs.	**-**
Laboratory work 13. Diagnosis, treatment and prevention of pneumonia in animals		**10**
Laboratory work 14. Diagnosis, treatment and prevention of pneumonia in animals.		**7**
Topic 8. **Diseases of the pleura: pleurisy, hydro- and pneumothorax.**		
Lecture 8 Diseases of the pleura: pleurisy, hydro- and pneumothorax.	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.	**-**
Laboratory work 8. Differential diagnosis, treatment and prevention of pleural diseases: pleurisy, hydro- and pneumothorax		**8**
Self work 4. Diagnostics, therapy and profilaxys of bronchial asthma in animals.		**3**
Module control work 2.		**30**
Total for work 2		**100**
Educational work		**(M1 + M2)/2*0,7 ≤ 70**
Examinatio		**30**
Total for course		**(Educational work + examination) ≤ 100**
Course project		**100**
Form of teaching activity	Results of teaching	**Assessment**
5 year of education, 9 semester		

Module 1. **Diseases of digestive system.**		
Topic 1. **Diseases of the digestive system. Classification, distribution, symptoms and syndromes of diseases of the digestive system.**		
Lection 1. Diseases of the digestive system. Classification, distribution, symptoms and syndromes of diseases of the digestive system.	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 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.	**-**
Laboratory work 1. Clinical laboratory and special methods of research, treatment and prevention of diseases of the digestive system		**10**
Laboratory work 2. Diagnosis, treatment and prevention of diseases of the oral cavity, pharynx and esophagus.		**10**
Self work 1. Common prophylaxys of internal diseases of animals. Analisys of keeping animals.		**2**
Topic 2. **Stomach and intestinal diseases with colic syndrome. Classification, main symptoms, principles of diagnosis and treatment of sick animals with colic syndrome**		
Lection 2. Stomach and intestinal diseases with colic syndrome. Classification, main symptoms, principles of diagnosis and treatment of sick animals with colic syndrome.	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.	**-**
Laboratory work 3. Diagnosis, treatment and prevention of ruminant foregut diseases.		**10**
Laboratory work 4. Diagnosis, treatment and prevention of diseases of the stomach and intestines with colic syndrome. Enteralgia, expansion of the stomach, intestinal flatulence. Chemo- and coprostasis.		**10**
Topic 3. **Diseases of the stomach and intestines: gastritis, peptic ulcer, gastroenteritis, gastroenterocolitis**		
Lection 3. Stomach and intestinal diseases with colic syndrome. Classification, main symptoms, principles of diagnosis and treatment of sick animals with colic syndrome.	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.	**-**
Laboratory work 5. Diagnosis, treatment and prevention of diseases of the stomach and intestines: gastritis, gastroenteritis, peptic ulcer disease.		**10**
Laboratory work 6. Diagnosis, treatment and prevention of diseases of the peritoneum (peritonitis, ascites)..		**10**
Self work 2. Metal indication of reticulum and entering of magnetic rings.		**5**
Topic 4. **Diseases of the liver and pancreas.**		
Lection 4. Concept of physiotherapy and physiotherapy. Principles and classification of modern methods of physiotherapy.	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 control the clinical and laboratory parameters of the animal during treatment. Understand the danger of incorrect prescription, overdose and side effects of drugs.	-
Laboratory work 7. Clinical laboratory and special methods of research, treatment and prevention of diseases of the liver and biliary tract.		**10**
Laboratory work 8. Clinical laboratory and special methods of research and treatment for diseases of the pancreas.		**10**
Module control work 1.		**30**
Total for module 1		**100**
Module 2. **Diseases caused by methabolic diseases**		
Topic 5. **Diseases caused by metabolic disorders. Classification, distribution, features of the course and diagnosis. Ketosis.**		
Lection 5. Diseases caused by metabolic disorders. Classification, distribution, features of the course and diagnosis. Ketosis.	To know the peculiarities of etiopathogenesis, symptoms, as well as the principles of treatment of animals and prevention of diseases caused by a	**-**

Laboratory work 9. Clinical laboratory and special methods of research of metabolic diseases in a clinic with thematically sick animals.	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 side effects of drugs.	**5**
Laboratory work 10. Diagnosis, treatment and prevention of diseases caused by a predominant disorder of protein, carbohydrate and lipid metabolism.		**5**
Topic 6. **Diseases caused by disturbances in the metabolism of macroelements.**		
Lection 6 Diseases caused by disturbances in the metabolism of macroelements. Osteodystrophy, hypomagnesemia, postpartum hypophosphatemia.	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.	**-**
Laboratory work 11. Clinical-laboratory and special research methods for disturbances in the metabolism of macroelements in animals.		**5**
Laboratory work 12. Differential diagnosis, therapy and prevention of macronutrient metabolism disorders in animals		**5**
Self work 3. Vascular diseases: arteriosclerosis and thrombosis. Assignment		**2**
Topic 7. **Microelementoses of animals. Distribution, general principles of diagnosis and prevention.**		
Lecture 7 Microelementoses of animals. Distribution, general principles of diagnosis and prevention.	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 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.	**-**
Laboratory work 13. Diagnosis, treatment and prevention of animal microelement diseases.		**10**
Laboratory work 14. Diagnosis, treatment and prevention of diseases caused by vitamin metabolism disorders.		**7**
Topic 8. **Diseases of the endocrine system. Causes and mechanisms of development.**		
Lecture 8 Diseases of the endocrine system. Causes and mechanisms of development. Diseases of the thyroid, parathyroid and adrenal glands.	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.	**-**
Laboratory work 8. Clinical laboratory and special methods of research, treatment and prevention of diseases of the endocrine system.		**8**
Self work 4. Diagnostics, therapy and profilaxys of bronchial asthma in animals.		**3**
Module control work 2.		**30**
Total for work 2		**100**
Educational work		**(M1 + M2)/2*0,7 ≤ 70**
Examinatio		**30**
Total for course		**(Educational work + examination) ≤ 100**
Course project		**100**
5 year of education, 10 semester		
Module 1. **Diseases of young animals, urinary and blood system.**		
Topic 1. **Diseases of young animals. Classification and spread of diseases of young animals.**		
Lection 1. Diseases of young animals. Classification and spread of diseases of young animals. Peculiarities of the age-related physiology of young animals. Immunodeficient condition of young animals. Antenatal hypotrophy.	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	**-**
Laboratory work 1. Diagnosis, treatment and prevention of neonatal diseases of young animals:		**10**

hypoglycemia, casein-bezoar disease, colostrum toxicosis, dyspepsia of newborns.	treatment. Understand the danger of incorrect prescription, overdose and side effects of drugs.	
Laboratory work 2. Diagnosis, treatment and prevention of postnatal diseases of young animals: hypoplastic anemia, parakeratosis of piglets, periodic tympany of calves, bezoar disease, white muscle disease, enzootic ataxia of lambs.		**10**
Self work 1. Analysis of clinical-laboratory and special methods of animal research for macronutrient metabolism disorders.		**2**
Topic 2. **Kidney diseases. Principles of therapy and prevention.**		
Lection 2. Classification, distribution and main syndromes of kidney and urinary tract diseases. Principles of therapy and prevention.	Know the peculiarities of etiopathogenesis, symptoms, as well as the principles of animal treatment and prevention of kidney diseases.	**-**
Laboratory work 3. Clinical-laboratory and special research methods of thematically sick animals in the clinic with diseases of the urinary system.	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.	**10**
Laboratory work 4. Clinical laboratory and special methods of research, treatment and prevention of kidney diseases.		**10**
Topic 3. **Disease of urinary tract. Urolithiasis. Distribution, general principles of diagnosis and therapy.**		
Lection 3. Urolithiasis. Distribution, general principles of diagnosis and therapy.	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.	**-**
Laboratory work 5. Clinical laboratory and special methods of research, treatment and prevention of diseases of the urinary tract.		**10**
Laboratory work 6. Differential diagnosis, treatment and prevention of urolithiasis (urolithiasis).		**10**
Self work 2. Analysis of clinical-laboratory and special methods of research on animals caused by kidney and urinary system disorders.		**5**
Topic 4. **Diseases of the blood system. Spreading and principles of diagnostics and treatment.**		
Lection 4. Diseases of the blood system. Classification. Spreading. Anemias: classification, etiology, methods of diagnosis and treatment.	To know the peculiarities of etiopathogenesis, symptoms, as 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.	-
Laboratory work 7. Clinical and hematological diagnosis, therapy and prevention of anemias: posthemorrhagic, hypoplastic, hemolytic.		**10**
Laboratory work 8. Diagnosis, therapy and prevention of diseases with hemostasis disorders. Hemorrhagic diatheses.		**10**
Module control work 1.		**30**
Total for module 1		**100**
Module 2. **Diseases of nervous system, skin and fury animals.**		
Topic 5. **Diseases of the nervous system. Spreading and principles of diagnostics and treatment.**		
Lection 5. Diseases of the nervous system. Classification, distribution, general syndromes and diagnosis of diseases of the nervous system.	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.	**-**
Laboratory work 9. Clinical-laboratory and special research methods of thematically sick animals with diseases of the nervous system.		**5**
Laboratory work 10. Diagnosis, therapy and prevention of diseases of the brain and spinal cord and their membranes.		**5**
Topic 6. **Functional diseases of the nervous system in animals. Distribution, general principles of diagnosis and therapy.**		

Lection 6 Functional diseases of the nervous system in animals. Distribution, general principles of diagnosis and therapy.	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.	**-**
Laboratory work 11. Functional nervous diseases. Epilepsy, eclampsia and neuroses.		**5**
Laboratory work 12. Stress syndrome in animals and its prevention.		**5**
Self work 3. Metabolic diseases of fur animals.		**2**
Topic 7. **Allergic and autoimmune diseases of animal skin. General characteristics, methods of diagnosis and treatment.**		
Lecture 7 Allergic and autoimmune diseases of animal skin. General characteristics, methods of diagnosis and treatment.	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 clinical and laboratory parameters of the animal during treatment. Understand the danger of incorrect prescription, overdose and side effects of drugs.	**-**
Laboratory work 13. Diagnostic methods and general principles of animal treatment for allergic diseases.		**10**
Laboratory work 14. Diagnosis, treatment and prevention of skin diseases and their derivatives. Sweat gland dysfunction. Autoimmune skin diseases.		**7**
Topic 8. **Diseases of fur animals.**		
Lecture 8 Diseases of fur animals. Biological features of fur animals. Distribution, diagnosis and prevention of internal diseases of fur animals.	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.	**-**
Laboratory work 15. Clinical laboratory and special methods of research, treatment and prevention of non-contagious diseases of fur animals.		**8**
Self work 4. Metabolic diseases of fur animals.		**3**
Module control work 2.		**30**
Total for work 2		**100**
Educational work	**(M1 + M2)/2*0,7 ≤ 70**	
Examinatio	**30**	
Total for course	**(Educational work + examination) ≤ 100**	
Course project		**100**

8.2 Scale for assessing student's knowledge

Student rating, points	National grading (exam/credits)
90-100	excellent
74-89	good
60-73	satisfactorily
0-59	unsatisfactorily

8.3 ASSESSMENT POLICY

Deadlines and Reschedule Policy:	Works that are submitted late without valid reasons will be assessed with a lower grade. Module tests may be retaken with the	Assignments that are submitted late without valid reason will be graded at a lower grade. The rearrangement of modules takes

	permission of the lecturer if there are valid reasons (e.g. a sick leave).	place with the permission of the lecturer if there are good reasons (for example, sick leave).
Academic Integrity Policy:	Cheating during tests and exams is prohibited (including using mobile devices). Term papers and essays must have correct references to the literature used	Copying during tests and exams is prohibited (including using mobile devices). Term papers, essays must have correct text references to the used literature.
Attendance Policy:	Attendance is compulsory. For good reasons (e.g. illness, international internship), training can take place individually (online by the faculty dean's consent)	Attendance 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).

9. Teaching and learning aids

- e-learning course of the discipline (https://elearn.nubip.edu.ua/course/view.php?id=2259 https://elearn.nubip.edu.ua/course/view.php?id=2260);
- lectures and presentations (in electronic form);
- textbooks, manuals, tutorials;
- guidelines for studying a discipline by full-time and part-time students; internship programmes of the discipline (if included in the curriculum).

10. Recommended sources of information.

Basic

1. Внутрішні хвороби тварин: практикум / Цвіліховський М.І., Бойко Н.І., Голопура С.І. та ін.; за ред. М.І. Цвіліховського. К.: ЦП КОМПРИНТ, 2016. 224 с.

2. Внутрішні хвороби тварин / Левченко В.І., Влізло В.В., Кондрахін І.П. та ін.; за ред. В.І. Левченка. Біла Церква, 2015. Ч.2. 610 с.

3 Internal Diseases of Ani-mals: manual / [M.I. Tsvilikhovskii, P.V. Sharandak, S.I. Golopura, et al.]; Ed. By P.V. Sharandak, A.O. Zemlianskyi. – Kyiv: Komprint, 2025. 313 p.

Secondary

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

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

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

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

5. Шарандак П.В., Розумнюк А.В., Дробот М.В. Міокардіодистрофія у високопродуктивних корів. Київ: НУБіП України, 2023. 166 с.

6. Зміни структури і функцій еритроцитів за бронхопневмонії телят / А.В. Розумнюк, Шарандак П.В., В.М. Костенко, Грушанська Н.Г. // Житомир: ПП «Євро-Волинь», 2023, 125 с.

7. Myocardium dystrophy of highly producing cows. Monograph / Sharandak P., Dubin R., Tishkina N., Yesina E. // Primedia eLaunch, Boston, USA, 2025. – 142 p.

8. Biochemical parameters of blood in cats with cardiogenic arterial thromboembolism and acute heart failure / Zhak Yu., et al. Ukrainian Journal of Veterinary Sciences, 2023. – Vol.14, # 1. – P. 74–89.

9. Шарандак П.В. Функціональний стан печінки й нирок у вівцематок. Житомир: ПП «Євро-Волинь», 2022. – 170 с.

10. Drobot M., Sharandak P., Druz N. Prevention of bronchopneumonia by the aerosol method and its influence on calf production indicators. ScienceRise: Biological Science, 2022, Is. 2 (31). P. 18–23.

11. 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