

Ministry of Education and Science of Ukraine

Sumy national agrarian University Faculty of

Veterinary Medicine

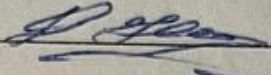
Department veterinary and sanitary inspection, microbiology, hygiene and pathological  
anatomy


**Working program ( syllabus ) educational component**

**OK 25. Pathological anatomy and autopsy**

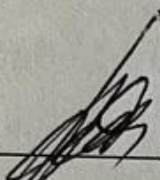
<b>Specialty</b>	211 VETERINARY MEDICINE
<b>Educational program</b>	<b>VETERINARY MEDICINE</b>
<b>Level higher education</b>	second (master's) level higher education

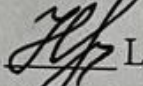
Sumy – 2026

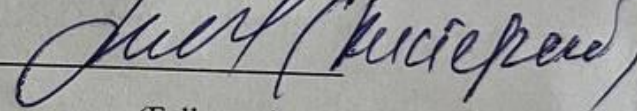
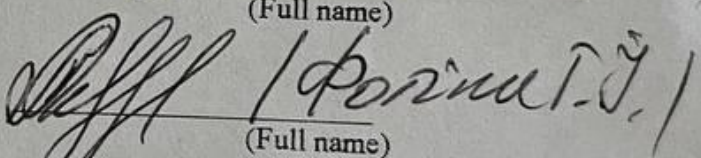
Developer:  Kisil D.O., Candidate of Veterinary Sciences, senior teacher  
(signature) (name, initials) (scientist degree and rank, position)

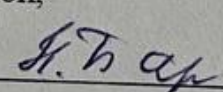
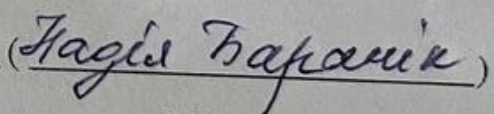
Reviewed, approved and ratified at a meeting of the Department veterinary and sanitary inspection, microbiology, hygiene and pathological anatomy (name departments)	protocol from 02.06.2026 No. 15
	 Manager departments (signature) <b>Petrov R.V.</b> (name, initials)

**Agreed:**

Educational guarantor programs  Oleksandr CHEKAN  
(signature) (full name)

Dean faculty, where is being implemented educational program  Lyudmila NAHORNA  
(signature) (full name)

Review on working program (attached) provided by:   
(Full name)  
  
(Full name)

Methodist department qualities education, licensing and accreditations    
(signature) (full name)

Registered in electronic base: date: 19.06. 2026

Information about revision working programs ( syllabus ):

Educational year, in to whom are introduced changes	Work application number programs with a description of the changes	Changes considered and approved		
		Date and number protocol meeting departments	Manager departments	Guarantor educational programs

### 1. GENERAL INFORMATION ABOUT EDUCATIONAL COMPONENT

1.	Name OK	25. Pathological anatomy and autopsy			
2.	Faculty/department	Veterinary medicine Veterinary and sanitary inspection, microbiology, hygiene and pathological anatomy			
3.	Status OK	Mandatory			
4.	Program/Specialty (programs), part of which is OK for ( <i>filled in for mandatory OK</i> )	Veterinary medicine 211 Veterinary medicine 25			
5.	OK can be offered for ( <i>filled in for selective OK</i> )				
6.	Level NRC	7 level			
7.	Semester and duration of study	6.7 semesters, 15 weeks			
8.	Number loans ECTS	10			
9.	Total hours and their distribution	Contact work (occupation)		Independent work	
		Lectures	Practical /seminar	Laboratory	
		6 semester			
		2			118
		7 semester			
		16		44	120
10.	Language of instruction	Ukrainian			
11.	Teacher/ Educational Component Coordinator	Teacher: PhD , senior teacher Kissel TO.			
11.1	Contact information	Faculty of Veterinary Medicine, room 15, room tel. 0665433827, <a href="mailto:dima_kisill@meta.ua">dima_kisill@meta.ua</a> <a href="https://vet.snau.edu.ua/kafedri/vetsanekspertizi-microbiologists%D1%97-zoogigiyeni-ta-bezpeki-i-yakosti-produktiv-animal-farming/warehouse-cafes/kisil-dmitro-oleksandrovich/">https://vet.snau.edu.ua/kafedri/vetsanekspertizi-microbiologists%D1%97-zoogigiyeni-ta-bezpeki-i-yakosti-produktiv-animal-farming/warehouse-cafes/kisil-dmitro-oleksandrovich/</a>			
12.	General description of the educational component	"Autopsy" and pathological diagnostics diseases animals» – as educational discipline lays foundations knowledge on the organization of the pathological anatomical service and its purpose, provides knowledge morphological and clinical manifestations diseases on all stages their development, generalizes the skills of clinical and anatomical analysis, synthetic analysis of diagnostic signs of diseases and their correct interpretation interpretation in cause and effect ratios that there are necessary for further professional activities.			

13.	Goal educational component	The purpose educational component there are formation in students systems of special knowledge regarding the sequence of pathological examination of corpses different animal species with purpose specification a lifetime diagnosis, installation morphological changes in organs and reasons death.
14.	Prerequisites study OK, connection with other educational components of the OP	Educational component, being basis for clinical subjects, is based on the foundation of general theoretical disciplines: pathomorphology, pathophysiology, forensic medicine, therapy, surgical diseases, infectious diseases diseases, obstetrics and gynecology, and integrates with these disciplines; it involves the formation of the ability to apply the acquired knowledge and practical skills with section-biopsy course in the process of further education and in future professional activities.
15.	Policy academic integrity	<p>The value of acquiring new knowledge is explained to applicants; the value and functions academic integrity; report about inadmissibility plagiarism, encourage to independent implementation educational tasks, correct references to sources of information when borrowing scientific materials. Cheating during tests and exams is prohibited (including using mobile devices ). Written works must have correct text references to the literature used.</p> <p>For violation of academic integrity, students may be held accountable for the following academic responsibilities:</p> <p>Academic plagiarism – score 0, re-do the assignment.</p> <p>Academic fraud (plagiarism, deception, passing off someone else's work) for your own) – cancellation of the points received; re-taking the assessment; re-performing the work not completed independently with new source data;</p> <p>Using electronic devices during final knowledge control – suspension from work, score 0, re-taking the final control</p>
16.	Link to the course in Moodle	6th semester: <a href="https://cdn.snau.edu.ua/moodle/course/view.php?id=2943">https://cdn.snau.edu.ua/moodle/course/view.php?id=2943</a> 7th semester: <a href="https://cdn.snau.edu.ua/moodle/course/view.php?id=2831">https://cdn.snau.edu.ua/moodle/course/view.php?id=2831</a>
17.	Educational keywords component	Pathological anatomy, autopsy, diseases, pathology, histopathology, tissues

## 2. RESULTS TEACHING BY EDUCATIONAL COMPONENT AND THEIR CONNECTION WITH PROGRAM LEARNING OUTCOMES

<b>Results teaching by OK:</b> After study educational component the student is expected to be able to..."	Software results teaching, which the OK is aimed at achieving (indicate the number according to numbering, given in OP) <sup>1</sup>	As is being evaluated RND
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<sup>1</sup> Must comply with the Matrix of ensuring program learning outcomes by the relevant components of the educational program, indicated for mandatory educational components of OP I and II levels, for all (mandatory and selective OK) OP III

	PRN 11	PRN 13	
6 semester			
<p>DRN 1. To determine at the microscopic level signs of cell morphology disorders, as well as cellular damage. Morphological manifestation of the disorder metabolism in fabrics and organs. Protein dystrophies ( dysproteinoses : cellular, stromal - vascular, mixed). To determine at the microscopic level signs of violations of the morphology of fat, carbohydrate and mineral cells dystrophies .</p> <p>Be able classify pathologic process.</p>	+		<ul style="list-style-type: none"> <li>- poll theoretical questions,</li> <li>- implementation tasks at the hospital,</li> <li>- testing, implementation independent tasks works</li> </ul>
<p>DRN 2. To determine pathomorphologically the main changes in tissues and organs during necrosis, morphogenesis of apoptosis. To determine pathomorphologically the main changes during compensatory, adaptive and restorative processes. AND also to determine types and classification pathological processes.</p>	+		<ul style="list-style-type: none"> <li>- poll theoretical questions,</li> <li>- implementation tasks at the hospital,</li> <li>- testing, implementation independent tasks works</li> </ul>
<p>DRN 3. To determine pathomorphologically the main changes in the manifestations of impaired blood and lymph circulation and tissue fluid metabolism.</p> <p>To differentiate microscopically.</p> <p>To determine pathomorphologically the main changes in the manifestations of impaired lymph circulation and exchange fabric fluid, pathomorphological changes in tissues and organs. And also to determine the types and classification pathological process.</p>	+		<ul style="list-style-type: none"> <li>- poll theoretical questions,</li> <li>- implementation tasks at the hospital,</li> <li>- testing, implementation independent tasks works</li> </ul>
<p>DRN 4. Determine pathomorphologically main changes at inflammatory processus , species inflammation, pathomorphologically determine the main changes in diseases that cause inflammatory processes in tissues and organs. And also to determine the types and classification pathological process.</p>	+		<ul style="list-style-type: none"> <li>- poll theoretical questions,</li> <li>- implementation tasks at the hospital,</li> <li>- testing, implementation tasks independent works</li> </ul>

<p>DRN 5. To determine pathomorphologically the main changes in primary and secondary immunodeficiencies and immunopathomorphologies . Define types and classification of the pathological process. To determine the pathomorphologically main changes in tissues in tumors and</p>		+	<ul style="list-style-type: none"> <li>- poll theoretical questions,</li> <li>- implementation tasks at the hospital,</li> <li>- testing,</li> <li>implementation tasks independent works</li> </ul>
<p>Hemoblastoses . Determine the types and classification of the pathological process.</p>			
7 semester			
<p>DRN 1. Know: safety techniques during autopsy and the basics of diagnostic and forensic veterinary autopsy corpses animals; meaning pathological autopsy of animal corpses; list of diseases for which autopsy is prohibited; the importance of postmortem pathological diagnosis in the fight against animal diseases; the structure and construction logic pathoanatomical diagnosis, its components , variants of the underlying disease. Establish pathological diagnosis, carry out differential diagnosis of diseases. Know the topographic location of the internal organs of various animals. Identify the main disease, complications of the main disease, concomitant disease</p>	+	+	<ul style="list-style-type: none"> <li>- Oral control (participation in a discussion on the topic of the lecture)</li> <li>- Laboratory and practical control (performance of tasks in laboratory work)</li> <li>- Written control (completion of tasks for independent study) work, independent study topics in general or individual issues of independent work (test results, preparation</li> </ul>

<p>DRN 2. Identify pathological changes in animal organs in diseases of various etiologies. Recognize postmortem changes at conducting autopsy. Distinguish between the purpose of pathological anatomy tools when conducting sectional work. Organize the required level of individual safety when working with cadaveric material. Know the methods of disposal and neutralization of cadaveric material.</p>	+	+	<ul style="list-style-type: none"> <li>- Oral control (participation in a discussion on the topic of the lecture)</li> <li>Laboratory and practical control (performance of tasks in laboratory work)</li> <li>- Written Preparation of presentations, presentation report independently processed material))</li> </ul>
<p>DRN 3. Know the rules for selecting pathological material. Analyze autopsy findings. Prepare autopsy documentation. Use knowledge for construction of a pathological-anatomical diagnosis. Fix, restore color, preserve and mount a macropreparation . Know the topographic location of the internal organs of animals of different species</p>		+	<ul style="list-style-type: none"> <li>- Oral control (participation in a discussion on the topic of the lecture)</li> <li>- Laboratory and practical control (performance of tasks in laboratory work)</li> <li>- Written Preparation of presentations, presentation of self- developed material))</li> </ul>
<p>DRN 4. Know the main diseases of the heart and blood vessels, blood-forming organs. Know the main diseases of the respiratory, digestive, genitourinary and nervous systems. Know the main infectious diseases of bacterial and viral etiology. Be able to recognize macroscopic and microscopic signs of the above diseases . Understand their etiology and pathogenesis. Distinguish signs the specified diseases from other pathological processes.</p>	+		<ul style="list-style-type: none"> <li>- Oral CONTROL (participation in discussions on the topic of the lecture)</li> <li>- Laboratory- practical control (performance tasks on laboratory works)</li> <li>- Written Preparation presentations, presentation report independently processed material))</li> </ul>

<p>DRN 5. Know the essence of death, its types and posthumous changes. Distinguish postmortem changes from intravital pathological changes processes. Understand object and purpose of the autopsy. Use skills to organize and conduct an autopsy. Learn equipment and autopsy features corpses different species animals. News appropriate pathological documentation.</p>	+	+	<ul style="list-style-type: none"> <li>- Oral control (participation in a discussion on the lecture topic)</li> <li>- Laboratory- practical CONTROL</li> <li>- Written</li> <li>- Summary</li> </ul>
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### 3. CONTENT EDUCATIONAL COMPONENT (PROGRAM ACADEMIC DISCIPLINE)

Topic. List questions, What will be considered within the topic	Distribution in within general budget time			Independent work	Recommended reading <sup>2</sup>
	Auditorium work				
	Luke	P.z / semin . z	Lab . wit h.		
<b>6 semester</b>					
Topic 1. Damage. Morphological manifestation of metabolic disorders in tissues and organs. Protein dystrophies ( dysproteinoses : cellular, stromal -vascular, mixed).				12	1,2,3,4,5,6,7,8
Topic 2. Pathomorphology fat, carbohydrate and mineral dystrophies .				12	1,2,3,4,5,6,7,8
Topic 3. Necrosis, morphogenesis apoptosis .				12	1,2,3,4,5,6,7,8
Topic 4. Compensatory - adaptive and restorative processes.				14	1,2,3,4,5,6,7,8
Topic 5. Morphological manifestation of blood and lymph circulation disorders and exchange fabric liquids.	2			14	1,2,3,4,5,6,7,8
Topic 6. Morphological manifestation of impaired lymph circulation and metabolism fabric liquids.				14	1,2,3,4,5,6,7,8
Topic 7. Pathomorphological manifestation of the inflammatory process. Types inflammation.				14	1,2,3,4,5,6,7,8
Topic 8. Immunopathomorphology. Pathomorphology primary and secondary immunodeficiencies .				14	1,2,3,4,5,6,7,8
Topic 9. Tumors and hemoblastosis .				14	1,2,3,4,5,6,7,8
Total	2			118	
<b>7 semester</b>					
<b>Topic 1.</b> Special pathomorphology . Pathomorphology cardiovascular diseases and hematopoietic systems.	2		2	6	1, 3, 8, 15
<b>Topic 2.</b> Pathomorphology respiratory and organ diseases digestion	2		2	6	2, 4, 7, 16
<b>Topic 3.</b> Pathomorphology diseases organs of the genitourinary and nervous	2		2	6	1, 6, 9

systems					
<b>Topic 4.</b> Pathology organs for acute and chronic bacterial diseases .	4		2	6	1, 7, 8, 12
<b>Topic 5. Differential</b> pathological and anatomical diagnosis of diseases animals.			2	6	4, 5, 11, 16
<b>Topic 6.</b> Pathomorphology of infectious diseases . Bacterial infections. Viral infections.	6		2	6	1, 3, 9
<b>Topic 7.</b> Diagnostic, educational and judicially - veterinary autopsy of animal corpses. Technique security at Autopsies of corpses.			2	6	1, 7, 14, 17
<b>Topic 8.</b> The importance of postmortem examination of animal corpses for verification of intravital diagnosis.			2	6	1, 5, 9, 16
<b>Topic 9.</b> Pathological changes in animal organs during diseases of various etiologies.			2	6	1, 10, 12, 16
<b>Topic 10.</b> Early and late cadaveric signs. Organization of autopsies, veterinary and sanitary requirements to the place of autopsy			2	6	3, 4, 8
<b>Topic 11.</b> Methods of dissection of animal corpses. Procedure and sequence of pathological examination corpses animals.			2	6	2, 5, 7, 9
<b>Topic 12.</b> Regulations selection of pathological and anatomical material			2	6	1, 5, 9, 8, 10
<b>Topic 13.</b> Security The environment. Utilization and disposal of cadaveric material.			2	6	1, 6, 8, 17
<b>Topic 14.</b> Dissection technique and features of pathological anatomy autopsies of various corpses species animals.			2	6	1, 3, 8, 17
<b>Topic 15.</b> Features of pathological and anatomical examination various organs.			2	6	2, 4, 7, 13
<b>Topic 16.</b> Features of autopsy of solipeds and cattle .			2	6	1, 3, 6, 12
<b>Topic 17.</b> Features pig autopsies and carnivorous.			2	6	1, 6, 8, 14

<b>Topic 18.</b> Features of autopsy of poultry carcasses. Features of autopsy of small home and laboratory animals.			2	6	3, 4, 8, 11
<b>Topic 19.</b> Preparation of autopsy documentation.			4	6	3, 5, 7, 10, 16
<b>Topic 20.</b> Dependence of pathoanatomical changes on the mechanism of death. The concept of pathoanatomical diagnosis.			4	6	4, 5, 9, 10, 17
Total	16		44	120	

#### 4. METHODS TEACHING AND TEACHING

DRN	Teaching methods (work that will be carried out teacher <u>during classroom lessons</u> , consultations)	Number of hours	Teaching methods (what types of learning activities should the student <u>perform independently</u> )	Number of hours
6 semester				
DRN 1.	Verbal: lecture, explanation at the outpatient clinic and consultations. Explanatory - demonstrative method - used constantly LPZ before processing of micropreparations (slideshow according to the lesson plan) and the study of museum macropreparations, obtained during the section of animal corpses. Analytical - all changes found during the study of micropreparations are analyzed to identify signs that are characteristic of a certain pathology.	2	Partial search method – the student develops certain topic using textbook, manuals, internet resource, etc. Reproductive – used as the way to acquire practical skills from pathomorphological studies based on assimilation theoretical basics general pathological anatomy.	22
DRN 2.	Verbal: lecture, explanation at the outpatient clinic and consultations. Explanatory - The		Partial search method – the student develops certain topic using textbook, manuals, Internet -	22

	<p>demonstration method is constantly used by the laboratory before working on micropreparations. (slideshow according to plan classes) and the study of macropreparations, which received on sections corpses animals in in case of presence in the organ pathoanatomical changes. Analytical – all changes found during the study of micropreparations are analyzed to identify significant signs that are characteristic for certain pathology.</p>		<p>resource etc. Reproductive – used as a way to acquire practical skills from pathomorphological studies based on assimilation theoretical basics of general pathology anatomy.</p>	
DRN 3.	<p>Verbal: lecture, explanation at the outpatient clinic and consultations. Explanatory - demonstrative method – used constantly before LPZ working out micropreparations (slideshow according to plan classes) and research macropreparations that received on sections animal corpses in case availability in the organ pathoanatomical changes . Analytical – all changes found during the study of micropreparations are analyzed to identify significant signs that are characteristic for certain pathology.</p>		<p>Synthesis method – establishment individual changes for determination of the underlying pathology in the organ, comparison knowledge received on LPZ with information found in as a result of an internet search. Problematic – the student is presented with a problem (a specific pathological process, or several pathological conditions grouped together according to a certain main characteristic), which must be determined using the evidence base.</p>	24
DRN 4.	<p>Verbal: lecture, explanation at the outpatient clinic and consultations. Explanatory - demonstrative method - used constantly LPZ before working out micropreparations (slideshow according to</p>		<p>Partial search method - the student develops a specific topic using a textbook, manuals, Internet resources, etc. Reproductive – used as the way to acquire practical skills from pathomorphological studies based on assimilation theoretical</p>	24

	<p>the lesson plan) and research museum macropreparations , that are obtained during the autopsy of animal corpses.</p> <p>Analytical – all changes found during the study of micropreparations are analyzed. for identifying signs that are characteristic of a certain pathology.</p>		<p>basics general pathological anatomy.</p>	
DRN 5.	<p>Verbal: lecture, explanation at the health center and consultations. Explanatory - demonstrative method - used constantly by the laboratory before working on micropreparations (slideshow according to plan classes) and research of museum macropreparations , that are obtained during the autopsy of animal corpses.</p> <p>Analytical – all changes found during the study of micropreparations are analyzed to identify signs that are characteristic of a certain pathology.</p>		<p>Synthesis method – establishing individual changes for determination of the underlying pathology in the organ, comparison knowledge received on LPZ with information found in as a result of an internet search.</p> <p>Problematic – the student is presented with a problem (a specific pathological process, or several pathological conditions grouped together according to a certain main characteristic), which must be determined using the evidence base.</p> <p>Productive method – used in a test survey, when the student is given a task containing various signs of a pathological process, for which it is necessary to independently make a general conclusion of main pathology.</p>	24
7 semester				
DRN 1	<p>Student survey with clarification of key issues of the subject, answers to questions</p>	8	<p>Independent processing of materials to topics. Memorization theoretical material,</p>	24

	<p>students, Mastery practical skills, laboratory work methods. Interactive discussion of the topic in in the form of discussions, which includes information presented in schemes and drawings, with mandatory attendance at the autopsy Solution clinical and situational tasks (concept pathological diagnosis, its components, variants of the underlying disease). Conducting autopsy with the following detailed analysis of a specific case, discussion of the main clinical data, filling relevant parts the post-mortem examination protocol.</p>		<p>observation. On basis studied and processed design material abstract from independent work. Processing of relevant sections protocol autopsy (according to real case); drafting pathological-anatomical diagnosis, preparation of a clinical and pathological epicrisis about the case. Familiarization with information on official websites on the topic of the lesson or a separate issue.</p>	
DRN 2	<p>Student survey with explanation key issues of the subject, answers to questions students, mastery practical skills, methods of performing laboratory work. Interactive discussion of the topic in in the form of discussions, which includes information presented in diagrams and pictures, with mandatory attendance at the autopsy Solution clinical and situational tasks (concept pathological diagnosis, its components , options underlying disease). Carrying out autopsy with the following detailed analysis specific case, discussion of the main clinical data, filling the relevant part the post-mortem examination protocol.</p>	8	<p>Independent processing of materials to topics. Memorizing theoretical material, observations. Based on the studied and processed material, the design abstract from independent work. Studying the relevant sections of the protocol autopsy (based on real case data ); preparation of pathological and anatomical diagnosis, preparation of a clinical-pathological-anatomical epicrisis about the case. Familiarization with information on official websites on the topic of the lesson or a separate issue.</p>	24
DRN 3	<p>Student survey with</p>	10	<p>Independent processing</p>	16

	<p>explanation key issues of the subject, answers to questions students, mastering practical skills, methods of performing laboratory work. Interactive discussion of the topic in the form of discussions, which includes information presented in diagrams and pictures, with mandatory attendance at the autopsy Solution clinical and situational tasks (concept pathological diagnosis, its components, options underlying disease). Carrying out autopsy with the following detailed analysis specific case, discussion of the main clinical data, filling the relevant part the post-mortem examination protocol.</p>		<p>of materials to topics. Memorization theoretical material, observation. On basis studied and processed design material abstract from independent work. Processing of relevant sections of the protocol autopsy (based on real case data); preparation of pathological and anatomical diagnosis, preparation of a clinical-pathological-anatomical epicrisis about the case Familiarization with information on official websites on the topic of the lesson or a specific issue.</p>	
DRN 4	<p>Poll students with explanation key subject matters, answers to the question students, mastering practical skills, methods implementation laboratory work. Interactive discussion of the topic in the form of discussions, which includes information presented in diagrams and pictures, with mandatory visit to the pathological autopsy. Solving clinical and situational tasks (the concept of pathological diagnosis, its components, variants of the underlying disease). Carrying out autopsy with the following detailed analysis specific case, discussion of the</p>	10	<p>Independent study of materials on the topic. Memorization theoretical material, observations. Based on the studied and processed material, the design abstract from independent works Processing of relevant sections of the protocol autopsy (based on real case data); Preparation of a pathological-anatomical diagnosis, preparation of a clinical-pathological-anatomical epicrisis about the case Familiarization with information official sites by topic of the lesson or a separate question.</p>	24

	main clinical data, filling relevant parts of the post-mortem examination protocol.			
DRN 5	Poll students with explanation key issues subject, answers to students' questions, mastery practical skills, laboratory work methods. Interactive discussion of the topic in the form of a discussion, which includes information presented in diagrams and pictures, with mandatory attendance at the autopsy Solving clinical and situational tasks ( including components, variants of the underlying disease). Performing an autopsy with the following detailed analysis of a specific case, discussion of basic clinical data, filling in the appropriate parts of the protocol.	10	Independent processing of materials on the topic. Memorization theoretical material , observation. On based on what has been learned and the processed material, the design of the abstract and with independent works Processing of the relevant sections of the autopsy report (by data real case); preparation of pathological anatomical diagnosis, clinical design - pathological anatomic epicrisis about the case. Familiarization with websites on the topic of the lesson or separate question.	24

### EVALUATION BY EDUCATIONAL COMPONENT

#### 5.1. Diagnostic evaluation (it is noted by need)

#### 5.2. Summative evaluation

5.2.1. For evaluation expected results teaching provided in semesters 6 and 7

No.	Summative assessment methods	Points / Weight in the overall score	Date of compilation
6th semester			
1.	Oral questioning. Solving situational tasks. Completing tasks on laboratory and practical classes;	20 points/20%	During the semester
2.	Presentations with reports on topics. Oral survey	10 points/10%	By week 7
3.	Presentations with reports on topics. Oral survey	10 points/10%	By week 15
4.	Computer-based testing (multiple choice) in Moodle	30 points/30%	Up to 6 weeks
5.	Computer-based testing (multiple choice) in Moodle	30 points/30%	Up to 14 weeks
7th semester			
6.	Oral questioning. Solving situational tasks. Completing tasks on laboratory and practical classes;	20 points/20%	During the semester
7.	Presentations with reports on topics. Oral survey	10 points/10%	By week 7
8.	Presentations with reports on topics. Oral survey	10 points/10%	By week 15
9.	Computer-based testing (multiple choice) in Moodle	15 points/15%	Up to 6 weeks

10.	Computer-based testing (multiple choice) in Moodle	15 points/15 %	Up to 14 weeks
11.	Exam	30 points/30%	According to schedule

### 5.1.1. Assessment criteria in semesters 6 and 7

Component	Unsatisfactorily	Satisfactorily	Good	Perfectly
6th semester				
Oral questioning. Solving situational tasks. Completing tasks on laboratory and practical classes;	< 12 points	12–14 points	15–17 points	18–20 points
	Task requirements not met	Most requirements are met, but individual components are missing or insufficiently disclosed, there is no analysis of other approaches to the issue	Oral questioning. Solving situational tasks. Completing tasks on laboratory and practical classes;	Task requirements not met
Presentations with reports on topics. Oral survey	< 4 points	4–6 points	7–9 points	10 points
	Task requirements not met	The presentation is prepared, but the report is not clear or logical.	All requirements of the assignment have been met, the report and presentation meet the requirements.	Fulfilled all the requirements of the task, demonstrated creativity, thoughtfulness, proposed their own solution to the problem
Presentations with reports on topics. Oral survey	< 4 points	4–6 points	7–9 points	10 points
	Task requirements not met	The presentation is prepared, but the report is not clear or	All requirements of the assignment have been met,	Fulfilled all the requirements of the task, demonstrated creativity, thoughtfulness,

		logical.	the report and presentation meet the requirements.	proposed their own solution to the problem
Computer-based testing (multiple choice) in Moodle	< 18 points	18–21 points	22–26 points	27–30 points
	Less than 60% correct answers	60–74% correct answers	75–89% correct answers	90–100% correct answers
Computer-based testing (multiple choice) in Moodle	< 18 points	18–21 points	22–26 points	27–30 points
	Less than 60% correct answers	60–74% correct answers	75–89% correct answers	90–100% correct answers
7th semester				
Oral questioning. Solving situational tasks. Completing tasks on laboratory and practical classes;	< 12 points	12–14 points	15–17 points	18–20 points
	Task requirements not met	Most requirements are met, but individual components are missing or insufficiently disclosed, there is no analysis of other approaches to the issue	Oral questioning. Solving situational tasks. Completing tasks on laboratory and practical classes;	Task requirements not met
Presentations with reports on topics. Oral survey	< 6 points	6–7 points	8 points	9–10 points
	Task requirements not met	The presentation is prepared, but the report is not clear or logical.	All requirements of the assignment have been met, the report and presentation meet the requirements.	Fulfilled all the requirements of the task, demonstrated creativity, thoughtfulness, proposed their own solution to the problem
Presentations with reports on topics. Oral survey	< 6 points	6–7 points	8 points	9–10 points
	Task requirements not met	The presentation is prepared, but the report is not clear or logical.	All requirements of the assignment have been met, the report and presentation	Fulfilled all the requirements of the task, demonstrated creativity, thoughtfulness, proposed their own solution to the

			meet the requirements.	problem
Computer-based testing (multiple choice) in Moodle	< 9 points	9–10 points	11–13 points	14–15 points
	Less than 60% of correct answers were scored .	60–69% of correct answers were scored .	70–89% of correct answers were obtained .	90–100% correct answers were obtained .
Computer-based testing (multiple choice) in Moodle	< 9 points	9–10 points	11–13 points	14–15 points
	Less than 60% of correct answers were scored .	60–69% of correct answers were scored .	70–89% of correct answers were obtained .	90–100% correct answers were obtained .
Exam	< 18 points	18–21 points	22–26 points	27–30 points
	Not learned main position disciplines , answers fragmentary or are absent .	Basic knowledge has been acquired, but the answers are incomplete, contain errors, and lack sufficient reasoning.	The material has been mastered at a sufficient level, the answers are logical and well-founded, and some inaccuracies are allowed.	Demonstrated deep understanding of the discipline, complete and reasoned answers, and the ability to analyze and summarize the material.

### 5.2. 2. Formative assessment in 7th and 7th semesters:

No.	Elements of formative assessment	Date
1.	Verbal feedback from the teacher while working on situational tasks	10-15 minutes at the end of each topic studied
2.	Feedback from the student during work	Next lesson after learning a new topic
3.	Oral feedback from the teacher and students after the presentation of independent work	6, 14 weeks

### 5.3. Formative evaluation:

For evaluation current progress in training and understanding directions further improvement is foreseen

N o.	Elements formative evaluation	Date
1	Written poll after study topics	5-8, 10-12 weeks
2	Oral feedback under time work on laboratory and practical tasks	For semester
3	Oral reverse connection from teacher after reports with presentation by subject matter independent study of the discipline	For occupation

## 6. EDUCATIONAL RESOURCE (LITERATURE)

### Basic sources

1. Kerek P. Methodology teaching disciplines « Pathological physiology and pathology anatomy agricultural animals » future to specialists veterinary medicine ( on example of VSP " Mukachevo" professional

college NUBiP of Ukraine " ) : diploma work Master's degree / P. Kerek . – Kyiv : NUBiP of Ukraine , 2022. – 73 p.

2. Tymchyk O. V. Pathological anatomy and physiology ( by professional direction ) : educational and methodological materials / O. V. Tymchyk . – Kyiv : Kyivsky capital university name Boris Grinchenko , 2022.

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### **Additional sources**

5. Urbanovich P. P. Pathological anatomy animals : teaching aids / P. P. Urbanovich, M. K. Pototsky , I. I. Gevkan [and others ] ; edited by P. P. Urbanovich, M. K. Pototsky . – Kyiv : Vetinform , 2008. – 896 p.

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8. Skrypka M. V. Course of lectures on pathological anatomy / M. V. Skrypka. – Poltava, 2009. – 320 p.

9. Ivanovska L. B. Pathological Anatomical diagnosis of poultry diseases : teaching aids / L. B. Ivanovska , G. A. Zon. – Sumy : Mriya-1, 2017. – 320 p.

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8. [S. A. Principles and Practice of Pathology for the Analysis of Animal Models \[Electronic resource\]](https://pmc.ncbi.nlm.nih.gov/articles/PMC6927822/) / S. A. Elmore, G. J. Carr, K. A. Montgomery [ et al . ] . – 2018. – Access mode : <https://pmc.ncbi.nlm.nih.gov/articles/PMC6927822/> .

9. Ekenstedt K. J. Brachycephaly in dogs: anatomy, pathology, genetics and welfare / K. J. Ekenstedt // Journal of Comparative Pathology. – 2020. – Vol. 176. – P. 109–115. – Mode Access : <https://pmc.ncbi.nlm.nih.gov/articles/PMC7380493/> .

10. [T. K. “One Medicine — One Pathology ”: Integration of Veterinary and Human Pathology \[Electronic resource\]](https://pmc.ncbi.nlm.nih.gov/articles/PMC7099239/) / T. K. Jones , G. Migaki . – 2015. – Access mode : <https://pmc.ncbi.nlm.nih.gov/articles/PMC7099239/> .

### **Informational resource**

11. [http://vetpathology.lviv.ua/biblioteka\\_studenta.html](http://vetpathology.lviv.ua/biblioteka_studenta.html)

12. <http://vindo.com.ua/razdel184/file1371013.html>

### **Others sources**

13. Kisil D. Autologous use of neural cells for the prevention of dementia syndrome and Alzheimer's disease in dogs / D. Kisil. – 2023.

14. Kisil D. Activity microglia in the cerebral cortex and perivascular macrophage activity in white substance in dogs with progressive Alzheimer's disease / D. Kisil . – 2023.

15. Modern trends in teaching disciplines at the Department of Virology, Pathoanatomy and Poultry Diseases of Sumy National Agricultural University / R. V. Petrov, G. A. Zon, O. I. Reshetylo, L. B. Ivanovska, O. S. Panasenko, D. O. Kisil // Bulletin of the Sumy National Agrarian University. Series " Veterinary Medicine". – 2022. – No. 4. – P. 51–57.

16. Kisil D. O. Antibacterial activity phagocytosis and adhesiveness erythrocytes ducks to bacteria / D. O. Kisil // Visnyk Sumy national agricultural University . Series " Veterinary Medicine". – 2022. – No. 4 (59). – P. 33–37.

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23. Atypical mycobacteria cultures isolated in different natural and geographical zones of Ukraine / A. I. Zavgorodniy , A. P. Paliy , V. V. Bilushko [ and etc. ] // *Regulatory Mechanisms in Biosystems .* - 2026. - Vol. 17, No. 2. – Art. e26032.