

# SYLLABUS OF THE EDUCATIONAL COMPONENT

## ANATOMY OF DOMESTIC ANIMALS



specialty	211 - Veterinary medicine	mandatory discipline	mandatory
educational program	veterinary medicine	faculty	veterinary medicine
educational level	not limited	chair	normal and pathological morphology

### TEACHERS

#### Fesenko Iryna Anatolyivna



**Higher education - veterinary medicine specialty**

**Scientific degree - candidate of veterinary sciences, specialty 16.00.02 - pathology, oncology and morphology of animals**

**Academic title**

**Work experience - 14 years**

**Indicators of professional activity on the subject of the course:**

- author of 7 methodological developments;
- experience of scientific work of 14 years;
- participant of scientific and methodical conferences;

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# Zagrebin Viktoria Viktorivna



**Higher education - master's degree in "Veterinary Medicine",  
Qualification - doctor of veterinary medicine in laboratory diagnostics**

**Assistant of the Department of Normal and Pathological Morphology of the State  
Biotechnological University**

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## GENERAL INFORMATION ABOUT THE EDUCATIONAL COMPONENT

**Goal**

the formation of a theoretical and practical understanding of the regularities of the structure of the organism, as well as the study of the form and structure of the organs and organ systems of the entire body of animals in close relationship with the conditions of existence, with the functions of the organs that they perform, under the influence of external factors and the internal environment.

**Format**

lectures, laboratory classes, independent work, individual research task for students with subsequent supervision by the teacher, writing content chapters tests, written control work or oral survey

**Detailing of learning results  
and forms of their control**

- the ability to imagine the general regularities and peculiarities of the structure of organs, systems and organs of animals, their species characteristics in domestic animals (GK1, GK2, SC1, PRN1) / individual laboratory classes, writing tests, assessment.
- the ability to characterize not only the peculiarities of the structure of a specific organ, but also its morpho-functional relationship with various systems of the animal body (GK1, GK2, SC1, PRN1) / individual laboratory classes, writing tests, assessment.
- ● the ability to understand the general regularities and peculiarities of the macroscopic structure of the organism of various classes and species of animals under the action of biotic and abiotic factors (GK1, GK2, GK3, SC1, PRN1) / individual laboratory classes, writing tests, assessment.

	<ul style="list-style-type: none"> <li>● ● be able to analyze information about the functions, structure, species characteristics of organs, systems and apparatuses of the body of domestic animals, analyze tasks and achievements in solving practical issues of animal husbandry (GK1, GK2, GK3, SC1, PRN1) / individual laboratory classes, writing tests, assessment.</li> <li>● ability to abstract thinking, analysis, synthesis, search, processing of information from various sources (GK1, GK2, GK3, SC1, PRN1) / individual laboratory classes, writing tests, credit .</li> </ul>
Scope and forms of control	13 ECTS credits (390 hours): 46 hours of lectures, 158 hours of laboratory-practical classes; 156 hours of self-study, current control (4 chapters); 30 hours of educational practice "Topographic anatomy". Final control – 1st and 2nd semesters undifferentiated assessment, 3rd semester exam. Differentiated credit from practice.
Requirements of the teacher	completing tasks on time, being active in classes, working with individual creative tasks, writing content chapters tests
Enrollment conditions	"free enrollment"

### COMPLIANCE WITH THE EDUCATION STANDARD AND EDUCATIONAL PROGRAM

Competences	<p>GK1. Ability to think abstractly, analyze and synthesize, search, process information from various sources.</p> <p>GK2. Ability to apply knowledge in practical situations</p> <p>GK3. Knowledge and understanding of the subject field and profession.</p> <p>SC1. 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.</p>	Program Learning Outcomes	PLO1. Know and correctly use the terminology of veterinary medicine.

### STRUCTURE OF THE EDUCATIONAL COMPONENT

Chapter 1. Somatic group of systems					
Lecture 1 (L1)	Introduction to anatomy. Basic morphological concepts	Laboratory lesson 1	General anatomy. The main regularities of the structure of the skeleton. Thoracic vertebrae.	Independent work	<ol style="list-style-type: none"> <li>1. Preparation of the bones of the spine.</li> <li>2. Preparation of chest bones.</li> </ol>

L2	General osteology. Characteristics of the Skeleton. Axial skeleton.	Ll 2	Visceral bones. Chest	<p>3. Preparation of limb bones</p> <p>4. Preparation of skull bones</p> <p>5. Preparation of the joints of the axial skeleton.</p> <p>6. Preparation of the joints of the peripheral skeleton.</p> <p>7. Study the structure and topography of fascia.</p> <p>8. Make training anatomical preparations from the muscular system: muscles of the head, neck, withers, back, lower back, chest and abdominal walls, as well as the dog's limbs.</p> <p>9. Determine the hair flows of different parts of the body.</p> <p>10. Identify the types and shapes of the mammary glands</p> <p>Mastering the methods of preparation.</p> <p>Interview on anatomical preparations.</p> <p>Implementation of the INDZ</p>
		Ll 3	Cervical spine.	
		Ll 4	Lumbar, sacral and tail sections of the spine.	
		Ll 5	Skull, dividing it into sections. External structure of the skull.	
		Ll 6	The internal structure of the nasopharyngeal part of the skull.	
L3	Morpho-functional characteristics of limbs. The skeleton of the limbs.	Ll 7	Division of limbs and their skeleton into departments and links. The structure of the bones of the limb girdle.	
		Ll 8	The structure of the bones of the stylopodium and zeigopodium. Bones of the auto event.	
L4	Arthrology	Ll 9	Connection of the bones of the axial skeleton.	
		Ll 10	Connection of the bones of the thoracic limb.	
		Ll 11	Connection of the bones of the pelvic limb.	
L5	General myology.	Ll 12	Fascia of the trunk. Muscles of the shoulder girdle.	
		Ll 13	Chest muscles. Abdominal muscles.	
L6	Special myology	Ll 14	Muscles of the spine. Ventral muscles of the neck. Head muscles.	
		Ll 15	Muscles of the hip and knee joints	
		Ll 16	Muscles of the metatarsal joint and joints of the toes.	
		Ll 17	Muscles of the shoulder and elbow joints.	
		Ll 18	Muscles of the wrist joint and finger joints of the hand.	

L7	Dermatology. Glandular derivatives of the skin. Corneal derivatives of the skin	LI 19	Skin. Glandular skin derivatives.		
		LI 20	Mammary glands.		
		LI 21	Skin. derivatives of the skin.		
		LI 22	INDZ from the somatic group of systems. Body areas, limb links and joints, skin and its derivatives		

**Chapter 2.**  
**Visceral group of systems.**

L8	General splanchnology. Body cavities. Serous formations in body cavities.	LI 23	Autopsy of the corpse. Serous formations.	Independent work	<ol style="list-style-type: none"> <li>1. Preparation of the muscles of the tongue.</li> <li>2. Preparation of the muscles of the pharynx.</li> <li>3. Determine the boundaries of the abdominal regions and describe them according to the scheme.</li> <li>4. Preparation of liver ligaments</li> <li>5. Determination of intestinal ligaments</li> <li>6. Preparation of the muscles of the anus</li> <li>7. To make educational anatomical preparations of the kidneys of domestic animals</li> <li>8. To make educational anatomical preparations of the genitals of domestic animals</li> </ol> <p style="text-align: center;"><b>Anatomical Preparation Interview Performance and Defense of INDZ</b></p>
L9	Characteristics of the digestion apparatus.	LI 24	Digestive apparatus. Oral organs		
		LI 25	Pharynx: its relationship with adjacent organs.		
		LI 26	Esophagus. The stomach is single-chambered		
		LI 27	Ruminant stomach		
		LI 28	Organs of the middle intestine		
		LI 29	Hindgut organs		
L10	Breathing apparatus	LI 30	Nis, nosova porozhnina. Nasopharynx, larynx.		
		LI 31	Trachea. Main bronchi. Lungs.		
L11	Female urogenital system.	LI 32	Urinary apparatus		
		LI 33	Female genital apparatus		
L12	Genital apparatus of the male	LI 34	Male genital apparatus		

		LI 35	Male genital apparatus		
		LI 36	INDZ. Characteristics of the sections and areas of the abdominal cavity. Topography of internal organs.		
<b>Chapter 3.</b> <b>Integrated group of systems</b>					
L13	General angiology. Circles of blood circulation. Heart.	LI 37	Heart, core. Circulatory circles.	Independent work	<b>1. Modern methods of injection of dog vessels.</b> <b>2. Determine the sources of blood supply to areas of the chest wall and chest cavity organs.</b> <b>3. Preparation of the vessels of the neck, chest wall and chest cavity.</b> <b>4. Determine the sources of blood supply to the abdominal organs.</b> <b>5. Preparation of the vessels of the abdominal and pelvic walls and the corresponding cavities.</b> <b>6. Determine the sources of blood supply to the links of the thoracic and pelvic limbs.</b> <b>7. Preparation of the vessels of the thoracic and pelvic limbs.</b> <b>8. Preparation of the vessels of the head organs.</b>
		LI 38	Arch of the aorta. Thoracic aorta. Subclavian artery.		
		LI 39	The aorta.		
		LI 40	Terminal branches of the abdominal aorta. Internal iliac artery.		
		LI 41	External iliac artery.		
		LI 42	Axillary artery.		
		LI 43	Common carotid artery		
L14	Venous trunks of the body	LI 44	Venous basin of the cranial vena cava.		
		LI 45	Venous basin of the caudal vena cava.		
L15	Lymphatic system.	LI 46	Collector lymphatic vessels		
		LI 47	Lymph nodes		
L16	Organs of hemocytopoiesis and immune protection	LI 48	Central organs of hematopoiesis and immunogenesis. Organs of hematopoiesis and immunogenesis in the fetus	Anatomical Preparation Interview Performance and Defense of INDZ	
		LI 49	INDZ Blood supply, lymph drainage of organs of the somatic and visceral groups of systems.		

L17	System of endocrine glands	LI 50	Central endocrine glands		<b>1. Preparation of the endocrine glands of the neck and abdominal cavity.</b> <b>2. Preparation of the nerves of the neck, nerves of the brachial plexus.</b> <b>3. Preparation of the nerves of the lumbar and sacral plexus.</b> <b>4. Determine the topography of nerve nodes, sympathetic nerves and plexuses.</b> <b>5. Preparation of elements of the sympathetic nervous system.</b> <b>6. Determine the topography of the branches of the vagus nerve and their innervation zones.</b> <b>7. Preparation of the vagus nerve.</b> <b>8. Determine the location of receptors of different types.</b> <b>9. Preparation of the muscles of the eye and lacrimal glands.</b>  <b>Anatomical Preparation Interview Performance and Defense of INDZ</b>
		LI 51	Peripheral endocrine glands		
L18	General neurology. Spinal cord. Spinal nerves	LI 52	General Neurology. Spinal cord.		
		LI 53	Spinal nerve. Cervical and thoracic nerves.		
		LI 54	Brachial plexus nerves.		
		LI 55	Lumbar nerves. Lumbar plexus.		
L19	Cerebrum	LI 56	Sacral and caudal nerves. Sacral plexus.		
		LI 57	Cerebrum.		
L20	Cranial nerves	LI 58	Cranial nerves.		
L21	Characteristics of the autonomic nervous system.	LI 59	The sympathetic part of the autonomic nervous system.		
		LI 60	Sympathetic innervation of organs of the somatic group of systems		
		LI 61	Sympathetic innervation of organs of the visceral group of systems		
		LI 62	Parasympathetic autonomic system. Main part.		
		LI 63	Parasympathetic innervation of the head organs		
		LI 64	Vagus nerve.		
		LI 65	Parasympathetic innervation of the thoracic and abdominal organs		
		LI 66	Sacral part parasympathetic autonomous system.		
L22	Esthesiology	LI 67	Olfactory, gustatory, skin, musculoskeletal and visceral analyzers		

		LI 68	Visual analyzer		
		LI 69	Balance and auditory analyzers.		
		LI 70	INDZ. Innervation and blood supply to organs of the somatic group of systems.		
		LI 71	INDZ. Innervation and blood supply to organs of the visceral group of systems.		

**Chapter 4.  
Anatomy of poultry, fish and bees**

<b>L23</b>	<b>Factors that determined the features of the body structure of birds, fish, and bees</b>	LI 72	Features of the structure of the skeleton, muscles and organs of the skin of the bird.		<ol style="list-style-type: none"> <li>1. To determine the structural features of the skeleton, muscles and organs of the general cover of the bird.</li> <li>2. To determine the structural features of the visceral and integral groups of poultry organ systems.</li> <li>3. Production of training preparations from poultry entrails.</li> <li>4. Dissect the skeleton of the fish.</li> <li>5. Make a training anatomical preparation from fish muscles.</li> <li>6. Make training preparations from fish entrails</li> <li>7. Prepare a presentation on breeding and keeping bees.</li> </ol>
		LI 73	Features of the structure of the organs of digestive, respiratory, genitourinary apparatus in poultry		
		LI 74	Features of the structure of the organs of the integral group in poultry.		
		LI 75	Preparation of organs of visceral and integral groups of systems in poultry		
		LI 76	Features of the structure of the skeleton, muscles and organs of the skin of the fish.		
		LI 77	Features of the structure of the organs of the digestive, respiratory, genitourinary apparatus in fish.		
		LI 78	Features of the structure of the organs of the integral group in fish.		
		LI 79	Anatomy of a bee		

**BASIC LITERATURE AND METHODOLOGICAL MATERIALS**



<p>Fixed literature</p>	<ol style="list-style-type: none"> <li>1. Anatomy of Domestic Animals. Systemic and regional approach / C Pasquini DVM, T Spurgeon PhD. Bookmarked &amp; OCR by VetBooks.ir. 5th edition, 1989 – 660 p. <a href="https://www.amazon.com/Anatomy-Domestic-Animals-Systemic-Regional/dp/0962311421">https://www.amazon.com/Anatomy-Domestic-Animals-Systemic-Regional/dp/0962311421</a></li> <li>2. Avian anatomy. Textbook and colour atlas / Horst E. König, Rüdiger Korb, Hans-Georg Liebich. 2nd-edition 2016. – 359 p.</li> <li>3. Veterinary Anatomy of Domestic Animals. Textbook and Colour Atlas / Horst Erich König, Hans-Georg Liebich. 7th, updated and extended edition. 2014. – 859 p.</li> <li>4. Miller's Anatomy of the Dog / Howard E. Evans PhD, Alexander de Lahunta DVM, PhD. 4th edition, 2013 – 871 p.</li> <li>5. Oral cavity, Tongue, Salivary glands, Teeth / Andrea Heinzlmann. Veterinary University Department of Anatomy and Histology 2019. – 177 p.</li> </ol>	<p>Methodological support</p>	<ol style="list-style-type: none"> <li>1. Somatic group of pet systems / Textbook for students of the Faculty of Veterinary Medicine in the specialties 211-Veterinary Medicine, 212-Veterinary Hygiene, Sanitation and Expertise. Additional edition, revised. Gorbatenko V. P., Bondarenko O. E., Miroshnikova O. S. // - Kharkiv: RVV Khdzva, 2019. – 245 p. (in Russian)</li> <li>2. Entrails of Pets: A Textbook for Students of the Faculty of Veterinary Medicine in the Specialties 211-Veterinary Medicine, 212-Veterinary Hygiene, Sanitation and Expertise. / V. P. Gorbatenko, O. E. Bondarenko, O. S. Miroshnikova – Kharkiv: RVV KDZVA, 2020 – 220 p.</li> <li>6. Vascular system. Endocrine glands of domestic animals. Textbook for students of the Faculty of Veterinary Medicine in the specialties 211: Veterinary Medicine /Gorbatenko V.P., Bondarenko O.E., Miroshnikova O.S. – Kharkiv: RVV Khdzva, 2020. – 164 p. (in Russian).</li> <li>7. Nervous system. Pet Analyzers: Textbook for Students of the Faculty of Veterinary Medicine in the Specialties 211-Veterinary Medicine, 212-Veterinary Hygiene, Sanitation and Expertise / V.P. Gorbatenko, V.I. Symonenko, O.E. Bondarenko, O.S. Miroshnikova. – Kharkiv: RVV KDZVA, 2020 – 173 p.</li> <li>5. Kushch M.M., Miroshnikova O.S., Fesenko I.A., Birka O.V. Anatomy of poultry: Textbook for students of the Faculty of Veterinary Medicine in the specialty 211 Veterinary Medicine. View. 2nd, ex. and additional. Kharkiv: RVV DBTU. 2023. 140 p. (Ukraine).</li> <li>6. Kushch M.M., Miroshnikova O.S., Fesenko I.A., Birka O.V. Anatomy is the equivalent of living. Methodical manual on topographic anatomy for conducting educational practice of 1st year students of the Faculty of Veterinary Medicine. Kharkiv. DBTU. 2023. 44 p. (Ukraine).</li> <li>7. INDZ on the anatomy of domestic animals. Methodological manual for the implementation of educational and research work of students. Field of Knowledge 21: Veterinary Medicine. Specialty 211-Veterinary Medicine / Miroshnikova O.S., Fesenko I.A. // State Biotechnological University. Kharkiv: RVV DBTU, 2022. – 52 p. (in Russian).</li> <li>8. International Veterinary Anatomical Nomenclature. In Latin, Ukrainian and English / [V. T. Khomich, V. S. Levchuk, L. P. Goralsky, Y. S. Shykh, I. G. Kalinovska]. – Kyiv, 2005. – 388 p.</li> <li>9. Rabbit Anatomy: A Brief Photographic Atlas and Dissection Guide, Part 1: Muscular System // Mukhopadhyay, Soma, Ruggiero Wagner Lisa. Augusta University, 2020. <a href="http://hdl.handle.net/10675.2/622930">http://hdl.handle.net/10675.2/622930</a></li> </ol>
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10. Rabbit Anatomy: A Brief Photographic Atlas and Dissection Guide, Part 2: Cardiovascular System // Mukhopadhyay, Soma, Ruggiero Wagner Lisa. Augusta University, 2023  
<https://scholarlycommons.augusta.edu/items/1a0e2708-3848-463c-90b4-0fafdcb52f80>

#### ELECTRONIC RESOURCES

- <https://vetbooks.ir/veterinary-anatomy-of-domestic-animals-textbook-and-colour-atlas-7th-edition/>
  - <https://www.vet-ebooks.com/anatomy-of-domestic-animals-systemic-and-regional-approach-5th-edition/>
  - <https://www.vet-ebooks.com/atlas-of-animal-anatomy-and-histology/>
  - <https://norecopa-no.translate.goog/norina/rabbit-anatomy-3d-model? x tr sl=en& x tr tl=uk& x tr hl=uk& x tr pto=sc>
  - <https://www.vet-ebooks.com/avian-anatomy-textbook-and-colour-atlas-pdf/>
  - <https://vetbooks.ir/anatomical-atlas-of-domestic-birds/>
7. Electronic course of the discipline "Anatomy of Domestic Animals" for students in the specialty 211 "Veterinary Medicine", on the basis of complete secondary general education  
<http://moodle.btu.kharkiv.ua/course/view.php?id=1671>  
<http://moodle.btu.kharkiv.ua/course/view.php?id=1672>

#### GRADING SYSTEM

SYSTEM		BALI	EVALUATED ACTIVITIES
Final assessment	100 points ECTS (standard)	up to 50	50% of the average grade for chapters
		up to 50	Final testing
Rating of section	100 points total	up to 60	Answers to test questions
		up to 20	The result of assimilation of the structure of histological preparations
		up to 10	Oral answers in laboratory classes
		up to 10	The result of mastering the block of independent work

#### NORMS OF ACADEMIC ETHICS AND INTEGRITY

All participants in the educational process (including students) must comply with the code of academic integrity and the requirements that are prescribed in the regulation "On the academic integrity of participants in the educational process of DBTU": to show discipline, well-manneredness, respect the dignity of each other, show benevolence, honesty, responsibility.