MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE

STATE BIOTECHNOLOGICAL UNIVERSITY

Faculty of Veterinary Medicine

"Approved by "
Head of the Department of
Normal and Pathological
Morphology

____ ___ (Byrka O.V.)
(signature) (surname and initials)

"25" June 2025

Department of Normal and Pathological Morphology

WORK PROGRAM

OF THE EDUCATIONAL DISCIPLINE

MC «Anatomy of domestic animals»

Level of Higher Education: The second level of higher education (master's) (title)

Field of Study: 21 Veterinary Medicine (code and title)

Specialty: 211 Veterinary Medicine (code and title)

Educational Program: educational and professional program "Veterinary Medicine" (title)

Kharkiv – 2025

Compilers: Candidate of Veterinary Sciences, Associate Professor Byrka O.V.,
Candidate of Veterinary Sciences, Senior Lecturer I.A. Fesenko,
Doctor of Veterinary Sciences, Professor M.M. Kushch
(academic rank, position, surname and initials)

The working program of the educational discipline was approved at the extended meeting of the Department of Normal and Pathological Morphology.

Protocol dated: "25" June 2025 No.10.

Approved by:

Program guarantor _____ Veterinary Medicine _____
(name of the program)

"25" June 2025 (_____ _____) Naumenko S.V.
(signature) (name)

Extended validity period until:

" __ " _____ 20 __ . Protocol від № ___ of" ____ " _____ 20 ___ .
Head of the Department _____ _____ (_____)
name of the Department (signature) (surname, name)

" __ " _____ 20 __ . Protocol від № ___ of" ____ " _____ 20 ___ .
Head of the Department _____ _____ (_____)
name of the Department (signature) (surname, name)

" __ " _____ 20 __ . Protocol від № ___ of" ____ " _____ 20 ___ .
Head of the Department _____ _____ (_____)
name of the Department (signature) (surname, name)

1. Description of the academic discipline

<table>
<tr><td rowspan="2">Name of indicators</td><td colspan="4">Characteristics of the academic discipline</td></tr>
<tr><td colspan="2">Full-time study</td><td colspan="2">part-time study</td></tr>
<tr><td rowspan="2">Number of credits:13</td><td colspan="4">Discipline status:</td></tr>
<tr><td colspan="4">Mandatory</td></tr>
<tr><td rowspan="3">Number of Parts: 4</td><td colspan="4">Year of preparation:</td></tr>
<tr><td>1-st</td><td>1-st</td><td colspan="2">2-st</td></tr>
<tr><td colspan="4">Semester</td></tr>
<tr><td rowspan="10">Total Hours: 390</td><td>1-st</td><td>2-st</td><td colspan="2">3-st</td></tr>
<tr><td colspan="4">Lecture</td></tr>
<tr><td>16 hours.</td><td>20 hours.</td><td colspan="2">16 hours</td></tr>
<tr><td colspan="4">Laboratory</td></tr>
<tr><td>30 hours.</td><td>58 hours.</td><td colspan="2">46 hours</td></tr>
<tr><td colspan="4">Independent work</td></tr>
<tr><td>74 hours.</td><td>42 hours.</td><td colspan="2">58 hours</td></tr>
<tr><td colspan="4">Educational practice</td></tr>
<tr><td></td><td>30 hours.</td><td colspan="2"></td></tr>
<tr><td rowspan="2">Weekly hours for full-time study:
Classroom – 204 ;
Independent work of the applicant – 156 .</td><td colspan="4">Type of control:</td></tr>
<tr><td>Credit (undifferentiated)</td><td>Credit (undifferentiated). Educational practice – credit (differentiated).</td><td>Final exam</td><td></td></tr>
</table>

2. Purpose and objectives of the discipline

The purpose of the discipline "Anatomy of Domestic Animals" is to provide applicants with thorough knowledge about the regularities of the structure of the organism, as well as the study of the form and structure of organs and organ systems of the whole organism of animals in close relationship with the conditions of existence, with the functions of organs that they perform, under the influence of the external environment and hereditary factors

Subject study tasks: The general educational tasks of the discipline are the formation of medical thinking, professional skills and professional worldview of the future master. The study of this discipline will reveal interdisciplinary connections, contribute to the structuring of acquired knowledge, and stimulate the desire for continuous self-improvement; The applied tasks of the discipline are aimed at studying anatomy in three main aspects of the formation of an organism: in adulthood, in the process of individual development (ontogenesis), in the process of historical development of individual species and even classes of animals (phylogeny). In accordance with the practical tasks facing anatomy, it is divided into systemic, functional, topographic, comparative, plastic, breed (exterior).

The student will learn to characterize not only the structural features of a particular organ, but also its morpho-functional relationship with various body systems.

The subject of study of the discipline is the structure of the body of animals, the division of its constituent parts into systems and apparatuses according to their functional connection; mutual placement of body parts and organs (syntopia); projection of individual organs onto the skeleton (skeletotopy); general principles of the structure and development of individual organs and systems in the process of their historical or individual formation; features of the structure of individual organs and systems, depending on the function they perform, and their specific structural features in domestic animals.

The basic disciplines for the successful assimilation of the program material of the discipline are *(on the structural and logical scheme of the educational program for compulsory disciplines)* School course of zoology, biology, chemistry. Also, the disciplines of histology, physiology, biochemistry, which are studied at the university in parallel with anatomy.

This discipline provides the formation of such programmatic learning outcomes: *(on the educational program for compulsory disciplines)*

PRN1. Know and correctly use the terminology of veterinary medicine.

3. Program of the Discipline

Chapter 1: ***Somatic group systems.***

General anatomy. Introduction to anatomy. Basic morphological concepts. General osteology. Characteristics of the skeleton. Axial skeleton. Morpho-functional characteristics of the limbs. Skeleton of the limbs. Arthrology. General myology. Special myology. Dermatology. Glandular skin derivatives. skin derivatives

Topic 1*:* *General anatomy. Introduction to anatomy. Basic morphological concepts. Main patterns of skeletal structure. General osteology. Characteristics of the skeleton.*

Summary of the topic 1. The concept of anatomy as a science, its place among biological disciplines. The purpose and objectives of the anatomy course. The importance of anatomy for the formation of medical thinking. The main stages of anatomy development. Domestic anatomical schools and directions. Objects and methods of studying anatomy. Types of anatomy. International Anatomical Nomenclature. Planes and directions in the animal's body. Basic principles of the structure of the animal's body. Basic morphological concepts. Characteristics of the apparatus of movement. Characteristics and role of the skeleton in the apparatus of movement and in the body. Division of the skeleton into sections. The structure of bone as an organ. Classification of bones. Physical properties and chemical composition of bones. Development and factors of bone formation. Manifestation of basic principles in the structure of the skeleton. Phenomena of reduction in the skeleton. Age features of bones.

Recommended Literature (1,3,10)

Topic 2: *General osteology. The main patterns of the structure of the skeleton. Axial skeleton. Thoracic vertebrae. Visceral bones. Chest. Cervical spine. Lumbar, sacral and caudal spine. Skull, dividing it into sections. The external structure of the skull. The internal structure of the naso-cerebral skull. The structure of the mandibular and hyoid bones.*

Summary of topic 2. The role of the skeleton in the body, the factors of its formation. Division of the skeleton into sections. Manifestation of basic principles in the structure of the skeleton. Phenomena of reduction in the skeleton. Quantitative characteristics of the skeleton. General characteristics of the spine. Full bone segment, reduction of its elements in different parts of the spine. The structure of the thoracic vertebrae of domestic animals. Ribs, sternum. Chest. The structure of the cervical vertebrae. The structure of the lumbar, sacral and caudal vertebrae of domestic animals. Morphological and physiological division of the skull. The bone composition of the nasomarebral part of the skull. Sculpture of the surfaces of the naso-cerebral skull in different species of animals. The structure of the mandibular and hyoid bones in different species of animals. Cerebral, nasal and oral cavities of the skull. Paranasal sinuses. Age features of the skull of animals.

Recommended Literature (1,3,10)

Topic 3: *Morpho-functional characteristics of limbs. Skeleton of the thoracic limb. Skeleton of the pelvic limb.*

Summary of topic 3. Terminology and general morpho-functional characteristics

of limbs. Dependence of limb types on the methods of movement of animals. Division of limbs into sections and links. Rules for the reduction of bone rays. Articular angles and their meaning. Determination of the links of the thoracic and pelvic limbs. The structure of the bones of the shoulder and pelvic girdles: scapula and pelvic bone. Humerus and femur. Bones of the forearm and lower leg. Location of the bones of the hand. Location of the bones of the foot.

Recommended Literature (1,3,10)

Topic 4: *Arthrology. Connection of the bones of the axial skeleton. Connection of the bones of the thoracic limb. Connection of the bones of the pelvic limb.*

Summary of topic 4. The role of the coupling system in the apparatus of arbitrary motion. Classification of types and methods of joining bones. Joint, as the most differentiated type of bone connection. Types of movements in the joints. Classification of joints. Connection of bones in segments. Connecting segments to each other. Connection of the bones of the thoracic limb with the bones of the axial skeleton. Joints of the thoracic limb. Connection of the bones of the pelvic limb with the bones of the axial skeleton. Joints of the pelvic limb

Recommended Literature (1,3,10)

Topic 5: *General myology. The role of the muscular system in the body and in the apparatus of voluntary movement. Physical properties and chemical composition of the muscle as an organ. Auxiliary organs of the muscular system. Fascia of the trunk. Muscles that attach the pectoral limb to the trunk.*

Summary of topic 5. The role of the muscular system in the body and in the apparatus of voluntary movement. Physical properties and chemical composition of muscle as an organ. Anatomical and functional connection of muscles with bones. General, special and auxiliary functions of muscles. Antagonism and synergism of muscles. Optimal muscle working conditions. Muscle classification. General characteristics of topographic and functional muscle groups. Fascia, synovial bag, synovial vagina, tendon, fibrous vagina, tendon, sesamoid bones, static devices - blocks, tendon cords. Muscles of the shoulder girdle.

Recommended Literature (1,3,10)

Topic 6. *Special myology. Muscles of the trunk, head.*

Summary of topic 6. Summary of the topic 8. The main topographic and functional muscle groups. Subcutaneous muscles.. The muscles of the ore cell are inspirators and expirators. Abdominal wall muscles. Abdominals. Inguinal canal. Vagina of the rectus abdominis muscle. Dorsal muscles of the spine. Ventral muscles of the spine. Mimic muscles of the head. Chewing muscles. Jugular sulcus.

Recommended Literature (1,3,10)

Topic 7. *Muscles that act on the joints of the thoracic and pelvic limbs.*

Summary of the topic 7. Muscles of the shoulder joint. Muscles of the elbow joint. Flexors and extensors of the wrist joint and finger joints. Auxiliary organs of the muscles of the thoracic limb. Muscles of the hip joint and their attachment points. Muscles of the knee joint and their attachment points. Muscles of the hock. Muscles of the joints of the fingers. Auxiliary organs of the muscles of the pelvic limb. Static devices of the pelvic limb.

Recommended Literature (1,3,10)

Topic 8. *Dermatology. Glandular skin derivatives. skin derivatives*.

Summary of the topic 8. The role of the skin in the body and its economic importance. Skin structure. Characteristics of skin derivatives. Classification of glands. Morpho-functional characteristics of the mammary glands. The structure of the digital organ of domestic animals. Morpho-functional characteristics of skin derivatives: horns, hair, pulps.

Recommended Literature (1,3,9,10)

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

General Splanchnology. Body cavities. Serous formations in body cavities. Characteristics of the digestive apparatus. Breathing apparatus. The genitourinary apparatus of the female. Male genital apparatus.

Topic 9. *General splanchnology. Body cavities. Boundaries of the thoracic and abdominal cavities. Determination of areas in the sections of cavities. Serous formations in body cavities.*

Summary of topic 12. Definition of the concepts of "Viscera" and "Splanchnology". Visceral group of systems. Morpho-functional characteristics of the insides of tubular and compact types of structure. Serous formations in body cavities. Derivative pleura. Peritoneal derivatives. The relationship of internal organs with serous membranes.

Recommended Literature (1,4,8,10)

Topic 10. *Digestive apparatus of domestic animals. The structure of the organs of the brain and foregut. The structure of the organs of the middle and hindgut.*

Summary of topic 10. The role of the digestive apparatus in the body. General characteristics of the digestive tube and its differentiation into organs according to function. Division of the digestive tube into sections. General characteristics of the organs of the brain, their age and species differences. Mouth and oral cavity. Organs of the oral cavity. Anatomical foundations of determining age by changes in teeth. Hard and soft palate, tongue, salivary glands. Pharynx: its relationship with adjacent organs. The structure of the pharyngeal wall. Tonsils of the pharynx. Morpho-functional characteristics of the organs of the foregut, their age and species differences. Esophagus. Stomach, classification of stomachs. The structure of the esophagus and single-chamber stomach. Ruminant stomach. The structure of the multi-chambered stomach of ruminants. General characteristics of the organs of the middle intestine, their age and species features The anatomical composition of the organs of the middle intestine. Morphological features of the small intestine. The structure of the wall digestive glands. The structure of the liver, the structure of the pancreas. General characteristics of the organs of the hindgut, their age and species characteristics. Features of the structure of the cecum and colon in domestic animals.

Recommended Literature (1,4,8,10)

Topic 11. *Breathing apparatus. Nose, nasal cavity. Nasopharynx, larynx. Trachea. Main bronchi. Lungs.*

Summary of topic 11. The role of the respiratory apparatus in the body. The main morphological features of the breathing tube. Anatomical composition and general patterns of differentiation of the breathing tube into separate organs. Species

features of the structure of the respiratory system. Development of respiratory organs in phylo- and ontogeny in connection with the development of the circulatory system. Anatomical composition of the respiratory apparatus. The structure of the nose and nasal cavity. Paranasal sinuses: topography, function. Respiratory part of the pharynx. Structure, topography of the larynx of domestic animals. Trachea: structure, topography. Main bronchi. Lungs: external and internal structure, topography.

Recommended Literature (1,4,8,10)

Topic 12. *Apparatus for urinating pets.*

Summary of topic 12. General function and role of urinary organs in the body. Anatomical composition of the urinary organs. Morpho-functional characteristics of the kidneys and urinary tract, their species and sex differences. Nephron. Classification of the kidneys. Topography of the urinary organs and urinary tract.

Recommended Literature (1,4,8,10)

Topic 13. *Sexual apparatus of females of various types of domestic animals.*

Summary of topic 13. Biological significance and role of the reproductive apparatus in the body. Anatomical composition of the female reproduction apparatus. Ovary: structure, topography. Fallopian tube. Classification of queens. Provisional organs of the genital apparatus of the female. Vagina, urogenital sinus. Shameful area.

Recommended Literature (1,4,8,9,10)

Topic 14. *Sexual apparatus of males of different types of domestic animals.*

Summary of topic 14. Biological significance and role of the reproductive apparatus in the body. Differentiation of the genital apparatus into separate organs according to the distribution of partial functions. The anatomical composition of the genital apparatus of the male. Age and species features of the structure and location of the genital organs of males. Testis and epididymis: external and internal structure, topography, position. Testicular membranes. Vas deferens: structure, topography. Spermatic cord. Adventitious gonads. Urogenital canal. Penis: structure, muscles, cavernous bodies. Prepuce. Scrotum.

Recommended Literature (1,4,8,9,10)

Chapter 3*: Integrated group of systems.*

General angiology. Circulatory circles. Heart. Venous highways of the body. Lymphatic system. Organs of hemocytopoiesis and immune defense. Endocrine gland system. General Neurology. Spinal cord. Spinal nerves. Brain. Cranial nerves. Characteristics of the autonomic nervous system. Esthesiology.

Topic 15. *General angiology. The integrating role of the vascular system. Circulatory circles. Heart.*

Summary of topic 15. Functions of the vascular system and its division into sections. General characteristics of the circulatory system, its anatomical composition. Patterns of course and branching of blood vessels. Circulatory circles. Vessels of the microcirculatory bed. Features of the placental circle of blood circulation. Heart: structure, conduction system, topography. Vessels associated with the heart. The structure of the core.

Recommended Literature (1,5,10)

Topic 16. *Aortic arch. Vessels associated with the aorta. Thoracic aorta. Subclavian artery. Abdominal aorta. Common carotid artery.*

Summary of topic 16. Branches of the aortic arch. Parietal and visceral branches of the thoracic aorta. Blood supply and innervation of the neck, withers, back, walls and organs of the chest cavity. Parietal and visceral branches of the abdominal aorta. Blood supply and innervation of the walls and organs of the abdominal cavity. Branching of the common carotid artery.

Recommended Literature (1,5,10)

Topic 17. *Terminal branches of the abdominal aorta. Internal iliac artery. External iliac artery. Axillary artery.*

Summary of the topic 17. Parietal and visceral branches of the internal iliac artery. Blood supply and innervation of the walls and organs of the pelvic cavity in males and females. Middle sacral and caudal arteries. Branching of the external iliac artery. Blood supply to the links of the pelvic limb. Blood supply to the breast. Branching of the axillary artery. Blood supply to the links of the thoracic limb.

Recommended Literature (1,5,10)

Topic 18. *Venous highways of the body. Venous basin of the cranial vena cava. Venous basin of the caudal vena cava.*

Summary of topic 18. Classification and structure of veins. Patterns of course and branching of veins. Formation of cranial and caudal vena cava. Venous highways of the body. Branching of the cranial vena cava. branching of the caudal vena cava. Portal vein.

Recommended Literature (1,5,10)

Topic 19. *Lymphatic system. Comparative characteristics of liquid tissues. General characteristics of the structure of the organs of the lymphatic system.*

Summary of topic 19. Classification of lymph nodes and their structure. Scheme of collector lymphatic vessels. Lymph nodes of the head, neck, trunk, internal organs, thoracic and pelvic limbs: their topography, roots, lymphatic drainage. Outflow of lymph from the head, neck, parts of the trunk, links of the limbs, organs of the thoracic, abdominal, pelvic cavities.

Recommended Literature (1,5,10)

Topic 20. *Organs of hemocytopoiesis and immune defense. General morpho-functional characteristics of hematopoietic organs in the body.*

Summary of topic 20. Reticulo-histiocytic system (RGS). Central and peripheral organs of hematopoiesis and immunogenesis. Organs of hematopoiesis and immunogenesis in the fetus.

Recommended Literature (1,5,10)

Topic 21. *The system of endocrine glands. The main regularities of the structure, development and relationship of integral systems with other body systems.*

Summary of topic 21. Morpho-functional features of the endocrine glands, their role in the body. Topographic and genetic classification of endocrine glands and general features of their structure. Endocrine glands located in the head area. Branchiogenic glands. Glands of the abdominal cavity. Provisional endocrine glands.

Recommended Literature (1,5,9,10)

Topic 22. *General Neurology. Spinal cord. Spinal Nerves.*

Summary of topic 22. Morpho-functional characteristics of the nervous system. General and special functions of the nervous system and the organs that perform them. Division of the nervous system and its anatomical composition. Reflex arc. Spinal cord: morpho-functional characteristics, its connection with the brain and organs. Membranes, intermembrane spaces, vessels of the spinal cord. Vessels of the spinal cord. Formation and branching of spinal nerves. Zones of innervation of cervical, thoracic, lumbar, sacral and caudal nerves. The formation of the brachial, lumbar and sacral plexuses of the spinal nerves.

Recommended Literature (1,6,10)

Topic 23. *Brain. Cranial nerves.*

Summary of topic 23. Development and structure of the brain. Division of the brain into sections. Ventricles of the brain. Membranes of the brain, submembrane spaces. Cerebral vessels. Morphofunctional characteristics of the parts of the brain. Formation of cranial nerves (CMN). Characteristics of cranial nerves. Branching of nerves. Connection of nerves with organs.

Recommended Literature (1,6,10)

Topic 24. *Characteristics of the autonomic nervous system.*

Summary of topic 24. General characteristics of the autonomic nervous system. Dividing it into sympathetic and parasympathetic parts. Features of the structure of a complex reflex arc. General characteristics of the sympathetic nervous system. Links of the efferent part of the sympathetic innervation of organs. Cute trunks. Sympathetic ganglia. Sympathetic innervation of organs. Head and sacral parts of the parasympathetic nervous system. Vagus nerve. Autonomic nerve plexuses.

Recommended Literature (1,6,10)

Topic 25. *Esthesiology.*

Summary of the topic 25. Morphology of analyzers. Classification of analyzers. Olfactory, gustatory, skin, musculoskeletal and visceral analyzers. Visual, equilibrium, auditory analyzers.

Recommended Literature (1,6,9,10)

Chapter 4. ***Anatomy of poultry, fish and bees. Factors that determined the structural features of the body of birds, fish, bees.***

Topic 26. *The structure of the body of poultry.*

Summary of the topic 26. Features of the structure of the skeleton, muscles and organs of the skin of the bird. Features of the structure of the organs of digestive, respiratory, genitourinary apparatus in poultry. Features of the structure of the organs of the integral group in poultry.

Recommended Literature (1,7,10)

Topic 27. *The structure of the body of a fish. The structure of the body of a bee.*

Summary of topic 27. Features of the structure of the skeleton, muscles and organs of the skin of the fish. Features of the structure of the organs of the digestive, respiratory, genitourinary apparatus in fish. Features of the structure of the organs of the integral group in fish. Anatomy of a bee.

Recommended Literature (1,2,10)

4. Structure of the discipline

Name Sections and topics	Number of hours					
	full-time form					
	Total volume	Classroom				Independent work
		Just	including			
			Lecture	Laboratory	Practical	
1	2	3	4	5	6	7
Chapter 1. Somatic group of systems. General anatomy. Introduction to anatomy. Basic morphological concepts. General osteology. Characteristics of the skeleton. Axial skeleton. Morpho-functional characteristics of the limbs. Skeleton of the limbs. Arthrology. General myology. Special myology. Dermatology. Glandular skin derivatives. skin derivatives.						
Topic 1: General anatomy. Introduction to anatomy. Basic morphological concepts. Main patterns of skeletal structure. General osteology. Characteristics of the skeleton.	**10**	**4**	**2**	**2**	**-**	**6**
Topic 2: General osteology. The main patterns of the structure of the skeleton. Axial skeleton. Thoracic vertebrae. Visceral bones. Chest. Cervical spine. Lumbar, sacral and caudal spine. Skull, dividing it into sections. The external structure of the skull. The internal structure of the naso-cerebral skull. The structure of the mandibular and hyoid bones.	**22**	**14**	**2**	**12**	**-**	**8**
Topic 3: Morpho-functional characteristics of limbs. Skeleton of the thoracic limb. Skeleton of the pelvic limb.	**12**	**6**	**2**	**4**	**-**	**6**
Topic 4: Arthrology. Connection of the bones of the axial skeleton. Connection of the bones of the thoracic limb. Connection of the bones of the pelvic limb.	**14**	**8**	**2**	**6**	**-**	**6**
Topic 5: General myology. The role of the muscular system in the body and in the apparatus of voluntary movement. Physical properties and chemical composition of the muscle as an organ. Auxiliary organs of the muscular system. Fascia of the trunk. Muscles that attach the pectoral limb to the trunk.	**10**	**4**	**2**	**2**	**-**	**6**
Topic 6. Special myology. Muscles of the	**11**	**5**	**1**	**4**	**-**	**6**

trunk, head.						
Topic 7. Muscles that act on the joints of the thoracic and pelvic limbs.	**15**	**9**	**1**	**8**	**-**	**6**
Topic 8. Dermatology. Glandular skin derivatives. skin derivatives.	**12**	**8**	**2**	**6**	**-**	**6**
Total for Chapter 1	***106***	***58***	***14***	***44***	***-***	***50***
Chapter 2. Visceral group of systems. General Splanchnology. Body cavities. Serous formations in body cavities. Characteristics of the digestive apparatus. Breathing apparatus. The genitourinary apparatus of the female. Male genital apparatus.						
Topic 9. General splanchnology. Body cavities. Boundaries of the thoracic and abdominal cavities. Determination of areas in the sections of cavities. Serous formations in body cavities.	**9**	**4**	**2**	**2**	**-**	**5**
Topic 10. Digestive apparatus of domestic animals. The structure of the organs of the brain and foregut. The structure of the organs of the middle and hindgut.	**19**	**14**	**2**	**12**	**-**	**5**
Topic 11. Breathing apparatus. Nose, nasal cavity. Nasopharynx, larynx. Trachea. Main bronchi. Lungs.	**11**	**6**	**2**	**4**	**-**	**5**
Topic 12. Apparatus for urinating pets.	**9**	**4**	**1**	**3**	**-**	**5**
Topic 13. Sexual apparatus of females of various types of domestic animals.	**9**	**4**	**1**	**3**	**-**	**5**
Topic 14. Sexual apparatus of males of different types of domestic animals.	**11**	**6**	**2**	**4**	**-**	**5**
Total for Chapter 2	***68***	***38***	***10***	***28***	***-***	***30***
Chapter 3. Integrated group of systems. General angiology. Circulatory circles. Heart. Venous highways of the body. Lymphatic system. Organs of hemocytopoiesis and immune defense. Endocrine gland system. General Neurology. Spinal cord. Spinal nerves. Brain. Cranial nerves. Characteristics of the autonomic nervous system. Esthesiology.						
Topic 15. General angiology. The integrating role of the vascular system. Circulatory circles. Heart.	**8**	**3**	**1**	**2**	**-**	**5**
Topic 16. Aortic arch. Vessels associated with the aorta. Thoracic aorta. Subclavian artery. Abdominal aorta. Common carotid artery.	**12**	**7**	**1**	**6**	**-**	**5**
Topic 17. Terminal branches of the abdominal aorta. Internal iliac artery. External iliac artery. Axillary artery.	**11**	**6**	**1**	**5**	**-**	**5**
Topic 18. Venous highways of the body. Venous basin of the cranial vena cava. Venous basin of the caudal vena cava.	**11**	**6**	**2**	**4**	**-**	**5**
Topic 19. Lymphatic system. Comparative characteristics of liquid tissues. General	**11**	**6**	**2**	**4**	**-**	**5**

characteristics of the structure of the organs of the lymphatic system						
Topic 20. Organs of hemocytopoiesis and immune defense. General morpho-functional characteristics of hematopoietic organs in the body.	**11**	**6**	**2**	**4**	**-**	**5**
Topic 21. The system of endocrine glands. The main regularities of the structure, development and relationship of integral systems with other body systems.	**11**	**6**	**2**	**4**	**-**	**5**
Topic 22. General Neurology. Spinal cord. Spinal Nerves.	**17**	**12**	**2**	**10**	**-**	**5**
Topic 23. Brain. Cranial nerves	**12**	**8**	**4**	**4**	**-**	**4**
Topic 24. Characteristics of the autonomic nervous system.	**21**	**18**	**2**	**16**	**-**	**3**
Topic 25. Esthesiology.	**15**	**12**	**2**	**10**	**-**	**3**
Total for Chapter 3	***140***	***76***	***20***	***70***	**-**	***50***
Chapter 4. Anatomy of poultry, fish and bees. Factors that determined the structural features of the body of birds, fish, bees.						
Topic 26. The structure of the body of poultry.	**25**	**9**	**1**	**8**	**-**	**16**
Topic 27. The structure of the body of a fish. The structure of the body of a bee.	**19**	**9**	**1**	**8**	**-**	**10**
Together under Chapter 4.	***46***	***18***	***2***	***16***	**-**	***26***
Total hours	**360**	**204**	**46**	**158**	**-**	**156**

5. THEORETICAL LESSON (LECTURES)

№ s/n	Topic name	Number of hours f/f
Chapter 1. Somatic group of systems. General anatomy. Introduction to anatomy. Basic morphological concepts. General osteology. Characteristics of the skeleton. Axial skeleton. Morpho-functional characteristics of the limbs. Skeleton of the limbs. Arthrology. General myology. Special myology. Dermatology. Glandular skin derivatives. skin derivatives.		
1.1	Introduction to anatomy. Basic morphological concepts	2
2.1	General osteology. Characteristics of the skeleton. Axial skeleton.	2
3.1	Morpho-functional characteristics of limbs. Limb skeleton	2
4.1	Arthrology	2
5.1	General myology	2
6.1	Special myology	2
7.1	Dermatology. Glandular skin derivatives. skin derivatives	2
Chapter 2. Visceral group of systems. General Splanchnology. Body cavities. Serous formations in body cavities. Characteristics of the digestive apparatus. Breathing apparatus. The genitourinary apparatus of the female. Male genital apparatus.		

8.2	General Splanchnology. Body cavities. Serous formations in body cavities.	2
9.2	Characteristics of the digestive apparatus.	2
10.2	Breathing apparatus	2
11.2	The genitourinary apparatus of the female.	2
12.2	Male genital apparatus	2
Chapter 3. Integrated group of systems. General angiology. Circulatory circles. Heart. Venous highways of the body. Lymphatic system. Organs of hemocytopoiesis and immune defense. Endocrine gland system. General Neurology. Spinal cord. Spinal nerves. Brain. Cranial nerves. Characteristics of the autonomic nervous system. Esthesiology.		
13.3	General angiology. Circulatory circles. Heart.	2
14.3	Venous highways of the body	2
15.3	Lymphatic system.	2
16.3	Organs of hemocytopoiesis and immune defense	2
17.3	Endocrine gland system	2
18.3	General Neurology. Spinal cord. Spinal nerves	2
19.3	Brain	2
20.3	Cranial nerves	2
21.3	Characteristics of the autonomic nervous system.	2
22.3	Esthesiology	2
Chapter 4. Anatomy of poultry, fish and bees. Factors that determined the structural features of the body of birds, fish, bees.		
23.4	Factors that determined the structural features of the body of birds, fish, bees	2
	Total	**46**

6. LABORATORY CLASSES

№ s/n	Name of the topic of the lesson	Number of hours f/f
Chapter 1. Somatic group of systems. General anatomy. Introduction to anatomy. Basic morphological concepts. General osteology. Characteristics of the skeleton. Axial skeleton. Morpho-functional characteristics of the limbs. Skeleton of the limbs. Arthrology. General myology. Special myology. Dermatology. Glandular skin derivatives. skin derivatives.		
1.1	General anatomy. The main patterns of the structure of the skeleton. Thoracic vertebrae.	2
2.1	Visceral bones. Chest	2
3.1	Cervical spine.	2
4.1	Lumbar, sacral and caudal spine.	2
5.1	Skull, dividing it into sections. External structure of the skull.	2

6.1	The internal structure of the naso-cerebral skull.	2
7.1	Division of limbs and their skeleton into sections and links. The structure of the bones of the girdles of the limbs.	2
8.1	The structure of the bones of stylopodia and zeigopodia. Bones auto-event.	2
9.1	Connection of the bones of the axial skeleton.	2
10.1	Connection of the bones of the thoracic limb.	2
11.1	Connection of the bones of the pelvic limb.	2
12.1	Fascia of the trunk. Muscles of the shoulder girdle.	2
13.1	Chest muscles. Abdominal muscles.	2
14.1	Muscles of the spine. Ventral muscles of the neck. Head muscles.	2
15.1	Muscles of the hip and knee joints	2
16.1	Muscles of the metatarsal joint and joints of the toes.	2
17.1	Muscles of the shoulder and elbow joints.	2
18.1	Muscles of the wrist joint and finger joints of the hand.	2
19.1	Skin. Glandular skin derivatives.	2
20.1	Mammary glands.	2
21.1	Skin. Derivatives of the skin.	2
22.1	IERT from the somatic group of systems. Body areas, limb links and joints, skin and its derivatives	2
Chapter 2. Visceral group of systems. General Splanchnology. Body cavities. Serous formations in body cavities. Characteristics of the digestive apparatus. Breathing apparatus. The genitourinary apparatus of the female. Male genital apparatus.		
23.2	Autopsy of the corpse. Serous formations.	2
24.2	Digestive apparatus. Oral organs	2
25.2	Pharynx: its relationship with related organs.	2
26.2	Esophagus. The stomach is single-chambered	2
27.2	Ruminant stomach	2
28.2	Organs of the middle intestine	2
29.2	Hindgut organs	2
30.2	Nose. Nasal cavity. Nasopharynx, larynx.	2
31.2	Trachea. Main bronchi. Lungs.	2
32.2	Urinary apparatus	2
33.2	Female genital apparatus	2
34.2	Male genital apparatus	2
35.2	Male genital apparatus	2
36.2	IERT. Characteristics of the sections and areas of the abdominal cavity. Topography of internal organs.	2
Chapter 3. Integrated group of systems. General angiology. Circulatory circles. Heart. Venous highways of the body. Lymphatic system. Organs of hemocytopoiesis and immune defense. Endocrine gland system. General Neurology. Spinal cord. Spinal nerves. Brain. Cranial		

nerves. Characteristics of the autonomic nervous system. Esthesiology.		
37.3	Heart, core. Circulatory circles.	2
38.3	Arch of the aorta. Thoracic aorta. Subclavian artery.	2
39.3	Abdominal aorta.	2
40.3	Terminal branches of the abdominal aorta. Internal iliac artery.	2
41.3	External iliac artery.	2
42.3	Axillary artery.	2
43.3	Common carotid artery	2
44.3	Venous basin of the cranial vena cava.	2
45.3	Venous basin of the caudal vena cava.	2
46.3	Collector lymphatic vessels	2
47.3	Lymph nodes	2
48.3	Central organs of hematopoiesis and immunogenesis. Organs of hematopoiesis and immunogenesis in the fetus	2
49.3	IERT. Blood supply, lymphatic outflow of organs of the somatic and visceral groups of systems.	2
50.3	Central endocrine glands	2
51.3	Peripheral endocrine glands	2
52.3	General Neurology. Spinal cord.	2
53.3	Spinal nerve. Cervical and thoracic nerves.	2
54.3	Brachial plexus nerves.	2
55.3	Lumbar nerves. Lumbar plexus.	2
56.3	Sacral and caudal nerves. Sacral plexus.	2
57.3	Brain.	2
58.3	Cranial nerves.	2
59.3	Sympathetic part of the autonomic nervous system.	2
60.3	Sympathetic innervation of organs of the somatic group of systems	2
61.3	Sympathetic innervation of organs of the visceral group of systems	2
62.3	Parasympathetic autonomic system. Main part.	2
63.3	Parasympathetic innervation of the head organs	2
64.3	Vagus nerve.	2
65.3	Parasympathetic innervation of the thoracic and abdominal organs	2
66.3	Sacral part parasympathetic autonomous system.	2
67.3	Olfactory, gustatory, skin, musculoskeletal and visceral analyzers	2
68.3	Visual analyzer	2
69.3	Balance and auditory analyzers.	2
70.3	IERT. Innervation and blood supply to organs of the somatic group of systems.	2
71.3	IERT. Innervation and blood supply to organs of the visceral group of systems.	2
Chapter 4. Anatomy of poultry, fish and bees. Factors that determined the structural features of the body of birds, fish, bees.		
72.4	Features of the structure of the skeleton, muscles and organs of the	2

	skin of the bird.	
73.4	Features of the structure of the organs of digestive, respiratory, genitourinary apparatus in poultry	2
74.4	Features of the structure of the organs of the integral group in poultry.	2
75.4	Preparation of organs of visceral and integral groups of systems in poultry	2
76.4	Features of the structure of the skeleton, muscles and organs of the skin of the fish.	2
77.4	Features of the structure of the organs of the digestive, respiratory, genitourinary apparatus in fish.	2
78.4	Features of the structure of the organs of the integral group in fish.	2
79.4	Anatomy of a bee	2
	Total, hours	**158**

7. SELF-STUDY WORK

№ s/n	Topic	Number of hours f/f
Chapter 1. Somatic group of systems. General anatomy. Introduction to anatomy. Basic morphological concepts. General osteology. Characteristics of the skeleton. Axial skeleton. Morpho-functional characteristics of the limbs. Skeleton of the limbs. Arthrology. General myology. Special myology. Dermatology. Glandular skin derivatives. skin derivatives.		
1	Preparation of the bones of the spine.	6
2	Preparation of chest bones	4
3	Preparation of limb bones	4
4	Preparation of skull bones	6
5	Preparation of the joints of the axial skeleton	8
6	Preparation of the joints of the peripheral skeleton	8
Chapter 2. Visceral group of systems. General Splanchnology. Body cavities. Serous formations in body cavities. Characteristics of the digestive apparatus. Breathing apparatus. The genitourinary apparatus of the female. Male genital apparatus.		
7	Study the structure, determine the topography of fascia	8
8	Determine the hair flows of different parts of the body	2
9	Identify the types and shapes of the mammary glands	4
10	Preparation of the muscles of the tongue. Preparation of the muscles of the pharynx	4
11	Determine the boundaries of the abdominal regions and describe them according to the scheme	2
12	Preparation of liver ligaments. Definition of intestinal ligaments	4
13	Preparation of the muscles of the anus	2
14	Preparation of the muscles of the larynx.	4

15	Preparation of the bronchi of the lungs.	2
16	To make educational anatomical preparations of the genitourinary apparatus of the female	6
17	To make training anatomical preparations of the genital organs of males	6
Chapter 3. Integrated group of systems. General angiology. Circulatory circles. Heart. Venous highways of the body. Lymphatic system. Organs of hemocytopoiesis and immune defense. Endocrine gland system. General Neurology. Spinal cord. Spinal nerves. Brain. Cranial nerves. Characteristics of the autonomic nervous system. Esthesiology.		
18	Determine the sources of blood supply to the chest wall and chest cavity organs	4
19	Preparation of the vessels of the neck, chest wall and chest cavity	4
20	Determine the sources of blood supply to the abdominal organs	4
21	Preparation of vessels of the abdominal and pelvic walls and corresponding cavities	4
22	Preparation of the vessels of the thoracic and pelvic limbs.	4
23	Preparation of the vessels of the head organs	4
24	Preparation of the endocrine glands of the neck and abdominal cavity.	4
25	Preparation of the nerves of the neck, nerves of the brachial plexus	6
26	Preparation of the nerves of the lumbar and sacral plexus	4
27	Determine the topography of nerve nodes, sympathetic nerves and plexuses	4
28	Preparation of elements of the sympathetic nervous system	4
29	Vagus nerve preparation	4
Chapter 4. Anatomy of poultry, fish and bees. Factors that determined the structural features of the body of birds, fish, bees.		
30	Preparation of the muscles of the eye and lacrimal glands	4
31	Determine the structural features of the skeleton, muscles and organs of the general cover of the bird.	4
32	Production of training preparations from poultry entrails	4
33	Dissecting a fish skeleton	4
34	Dissect the skeleton of a fish	4
35	Make training preparations from fish entrails	4
36	Prepare a presentation on bee breeding and keeping	6
	Total	**156**

8.Teaching methods

(According to the structure of the academic discipline)

During the teaching of the subject, the applicant uses both classical teaching methods (lecture, laboratory lesson, independent work) and specific methods due to the peculiarities of this discipline (work with macroscopic preparations, independent preparation, production of educational and museum preparations).

All lectures are accompanied by multimedia presentations with a large number of visualizations in the form of slides, photographs, drawings, diagrams and with the use of educational films. This greatly helps to keep the attention of applicants and helps to increase the assimilation of the material. The practice of giving problem lectures is also used, when at the beginning of the lecture students are asked a certain problematic question and, as the lecture material is presented, answers are found to explain and solve it. This process is significantly facilitated by a constant dialogue between the lecturer and the audience, which helps to eliminate the passivity of applicants, encourage and involve them in active cooperation, and constantly monitor the level of residual knowledge.

When conducting laboratory classes, teachers try to explain the structure of individual organs and organ systems as a whole. This contributes to the high efficiency of learning and provides the acquired knowledge of a practical nature. These macropreparations, tabular funds of the department are also an integral part of the independent work of students in their free time. If necessary, they can get professional advice from the teacher on duty.

9. Control methods

- ❖ oral interview;
- ❖ test control;
- ❖ credit;
- ❖ exam.

During the current and final control, the means of assessing the results of learning in the discipline are standardized computer tests.

The final semester control (credit) is determined by the sum of the actually scored rating points from the current control and the individual educational and research task.

Current control is carried out during the semester by means of a survey (oral or test), as well as checking the quality of mastering the topics of independent work.

When choosing the criteria for assessing the assimilation of the discipline program by the applicant, the implementation of the program and the assimilation of the material in terms of lecture and laboratory classes, as well as the implementation of the independent work provided for by the program, were taken into account.

All types of control (oral interview, written interview, test interview) are closely related and organized in such a way as to stimulate the effective independent work of applicants and ensure an objective assessment of the level of their knowledge.

After completing the study of the discipline (part of the discipline), the final control is carried out in the form of an exam (test) and the applicant can score from 60 to 100 points inclusive during the semester at the control points.

10. Distribution of points received by applicants (credit)

In the process of studying the course, the success of applicants is determined by conducting ongoing and final controls (credit and exam).

Current testing, answers in class and control of independent work				Total points
Chapter 1	Chapter 2	Chapter 3	Chapter 4	**60-100**
T__1-8	T__9-13	T__14-19	T__20-24	
0-100	0-100	0-100	0-100	
Overall rating score (ORS = R+E)				**0-100**

T__, T__... T__– topics of chapters.

The grade that a higher education applicant receives for conducting an intermediate (current) control (CurC) consists of the points that the applicant receives during testing (T), which are 30%; the points that the applicant receives during activity in classes (Cl), which are 40%; and the points for mastering the independent work block (InW), which are 30%.

CurC = **T**x**0,3+Cl**x**0,4+InW**x**0,3**

In each section of the educational component, current control is carried out (**current control** - CurC).

For applicants in the fall (spring) semester, when the final knowledge test is completed with an undifferentiated credit (UDC), the final sum of points (UDC points) is the arithmetic average of the points of the four current tests of the fall (spring) semester:

UDC points **=** (CurC **1+** CurC **2** + CurC **3** + CurC **4**) **/ 4**

Based on the results of the semester control, the applicant's transcript is assigned a "pass/fail" grade on the national scale.

11. Distribution of points received by applicants (exam)

Current testing, answers in class and control of independent work				Total points	
Chapter 1	Chapter 2	Chapter 3	Chapter 4	According to the results of the chapters (R)	Exam (E)
T__1-8	T__9-13	T__14-19	T__20-24	((T1+T2+... T8)/n)x60%	Ex40%
0-100	**0-100**	**0-100**	**0-100**		
Overall rating score (ORS = R+E)				**60-100**	

T1, T2... T8 – topics of chapters, n – number of topics.

The final control of the academic performance of applicants is carried out in the form of an exam based on the results of computer testing. The exam grade for the educational component (discipline) is determined on a 100-point scale.

The exam grade (EG) is 40% of the total final grade (FG).

EG = ETS x 0,4

where: ES – exam score; ETS– exam testing scores, which account for 40% of the points scored during exam testing.

The final grade for the discipline is given on a 100-point scale. It is calculated as the average arithmetic value (AAV) of all the grades received by the student from the current control (CurC) of the assimilation of the material of the sections, with their subsequent conversion into points according to the following formula:

AAV = (CurC chapter1 + CurC chapter.2 + CurC chapter.3 + CurC chapter.4**)** / 4

CurCS = AAV x 0,6

where: CurCS – current control scores, which make up 60% of the total final score; AAV is the arithmetic average value of all grades received by the student from the current control

The applicant can score up to 60 points inclusive at the control points of the mastery of the sections within 2 semesters.

Thus, the final grade (FG) is calculated using the formula:

FG = EG + CurCS

The results of the tests are displayed in the DBTU Moodle system. All forms of control are included in the 100-point assessment scale.

12. Scale: national and ECTS and assessment criteria for determining the level of knowledge and skills

The control of students' knowledge and skills in the discipline is carried out in accordance with the use of the European system of transfer and accumulation of ECTS credits.

Basic provisions:

The total number of current control measures that a student must pass in the discipline is determined taking into account the number of credits in the discipline.

Based on the results of the current control measure, the student's level of assimilation of the educational material is assessed according to the national scale and the ECTS scale.

The number of points received by the student in the assessment of the final control is correlated with the marks on the national scale and the ECTS scale in accordance with Table

1. Rating scale

100-point scale	**National scale**	**interpretation**	**ECTS scale**

90 – 100	excellent	**Excellent -** excellent answer, the work is fulfilled with only a small number of errors	**A**
82 – 89	good	**Very well-** above average with a few errors	**B**
74 – 81		**Well -** in general the correct answer, the work with a certain number of serious errors	**C**
64 – 73	satisfactory	**Satisfactorily –** not bad, but with big number of errors	**D**
60 – 63		**Quite satisfactorily –** the work meets the minimum criteria	**E**
35– 59	unsatisfactory	**Unsatisfactorily –** with the possibility to pass again	**FX**
0-34		**Unsatisfactorily –** with compulsory passing of the work once again	**F**

Passing current tests is mandatory. A section is considered passed if the student has scored the minimum required number of points or more.

The results of the rating for the section are brought to the attention of students no later than the third working day after the control event and, in the absence of claims from the students, are considered final.

If the student does not agree with the decision to assign him rating points for the section, then he must immediately after their announcement file a written appeal to the head of the department and, within the specified period, take an oral attestation for the section before the commission. The composition of the appeal commission in each specific case is determined by the head of the department. The decision of the commission is final.

A student who did not appear for the current test has the right to take the missed current test during the assessment week.

The final rating of current performance in the discipline is calculated by averaging the ratings from all sections. The semester grade is given to the student taking into account the results of the final and current tests. The maximum number of points that a student can receive when studying a discipline is 100.

The exam involves a final test. If permission is granted for automatic exam enrollment, a student who has passed all current tests on time and has been certified with an "excellent" grade based on their results can receive a credit automatically. The semester grade in this case is the average grade for the sections.

The teacher is required to submit the completed credit and examination report to the academic department within the following deadline: for the exam - no later than the next business day after its completion.

The mastery of the independent work block is assessed on a scale according to the following regulations (Table 2)

Table **2.**

Assessment criteria (100-point system, oral interview).

The level of formation of a student's knowledge and skills in the academic discipline, both during the final and current control, is assessed on a 100-point scale

with subsequent conversion of grades into the national scale and the ECTS grading scale.

№	**Criteria**	Maximum number of points	Description
1	Completeness of the answer	30 points	The answer covers all the main aspects of the question, reveals its content in accordance with the curriculum.
2	Correctness and accuracy of presentation	20 points	The answer does not contain factual, logical or terminological errors.
3	Consistency and logic	10 points	The answer is logically structured, without inconsistent or chaotic fragments.
4	Language and style of presentation	10 points	The expression is competent, clear, using professional terminology.
5	Independent thinking	10 points	The student demonstrates the ability to draw his own conclusions, analyze, compare, give examples.
6	Additional knowledge (outside the main program)	10 points	The answer contains references to modern sources, interdisciplinary connections, and the latest data.
7	Ability to answer additional questions	10 points	The student confidently responds to the teacher's clarifying or in-depth questions, provides additional arguments or examples.

The conversion of grades on a 100-point scale to the national scale and ECTS scale is carried out according to the table:

Total points for all types of learning activities	**Mark according to ECTS scale**	**Mark according to national scale**
90 – 100	A	excellent
82 – 89	B	good
74 – 81	C	
64 – 73	D	satisfactory
60 – 63	E	
35 – 59	FX	unsatisfactory
0 – 34	F	

Activity in classes is assessed on a scale with a maximum of 100 points in accordance with the following regulations (Table 3)

Table 3.

ACTIVITY ASSESSMENT SCALE IN CLASSES

ECTS scale	National scale	Points	Score interpretation
A	**Excellent**	**90-100**	the student works actively during classes, provides complete answers to the teacher's questions and shows a deep mastery of the material, is able to express his own opinion when discussing situational tasks, demonstrates the ability to independently and reasonedly present the material, analyze phenomena and facts, make independent generalizations and conclusions, correctly completes educational tasks, has a full synopsis of theoretical material, regularly visits the Moodle system
B	**Very well**	**82-89**	the student works actively during the lessons, the questions are covered in full, the presentation of the material is logical, substantiated by facts, with references to literary sources, the coverage of the questions is completed with conclusions, the student has shown the ability to analyze facts and events, as well as to complete educational tasks. However, there are inaccuracies in the answers, some minor errors, the presence of a full summary of the theoretical material, regular visits to the Moodle system
C	**Well**	**74-81**	the student works actively during the lessons, the questions are covered in full, the presentation of the material is logical, substantiated by facts, with references to literary sources, the coverage of the questions is completed with conclusions, the student has shown the ability to analyze facts and events, as well as to complete educational tasks. However, there are inaccuracies in the answers, some minor errors, there is insufficient reasoning when presenting the material, there is an incomplete synopsis of the theoretical material, partial access to the Moodle system
D	**Satisfactorily**	**64-73**	The student has generally mastered the essence of the issues on the topic, demonstrates knowledge of the lecture material and educational literature, tries to analyze facts and events, draw conclusions and solve situational problems. However, in class he behaves passively, responds only to the

			teacher's call, gives incomplete answers to questions, makes gross mistakes when covering theoretical material, incomplete notes on theoretical material, partial access to the Moodle system
E	**Quite satisfactorily**	**60-63**	the student lacks understanding of the main essence of the questions, conclusions, generalizations, demonstrated inability to solve situational problems, incomplete note-taking of theoretical material, partial access to the Moodle system
FX, F	**Unsatisfactorily**	**0-59**	lack of desire to participate in the discussion of issues, lack of notes, irregular visit to the Moodle system

Example: a student wrote the test tasks of the current control for 85 points. Multiply by 0.3. The result for the tests is 25.5 points. For independent work, the student received 88 points. Multiply by 0.3. The result for it is 26.4 points. For activity in classes - the student received 74 points. Multiply by 0.4. We get 29.6. In total, the number of points for the current control is 81.5 points. We average towards a larger number and get 82 points, which is equal to good B.

Regarding the final certification of the student, the result obtained for the student's current work (average value for 4 Chaptes, multiplied by 0.6) and the final test work (multiplied by 0.4) is taken into account.

Example: Chapte I – 83 points, Chapte II – 95 points, Chapte III – 73 points, Chapte IV – 88 points. The sum of the points for the sections is 339 / 4 = 84.75 (85) points – this is the average value. Next, 85 × 0.6 = 51 points. The student wrote the final exam with 91 points. 91×0.4 = 36.4 points. Therefore, the total number of points for the discipline is 51.0 + 36.4 = 87.4. We average towards a smaller number and get 87 points, which is equal to a good or B grade.

13.Methodological support

1. Slide presentations.
2. Collection of museum wet and dry macropreparations.
3. Thematic video library.
4. Photo.

14. Recommended Literature

References:

1. Anatomy of Domestic Animals. Systemic and regional approach / C Pasquini DVM, T Spurgeon PhD. Bookmarked & OCR by VetBooks.ir. 5th edition, 1989 – 660 p. https://www.amazon.com/Anatomy-Domestic-Animals-Systemic-Regional/dp/0962311421
2. Avian anatomy. Textbook and colour atlas / Horst E. König, Rüdiger Korbel, Hans-Georg Liebich. 2nd-edition 2016. – 359 p.
3. Veterinary Anatomy of Domestic Animals. Textbook and Colour Atlas / Horst Erich König, Hans-Georg Liebich. 7th, updated and extended edition. 2014. – 859 p.

4. Miller's Anatomy of the Dog / Howard E. Evans PhD, Alexander de Lahunta DVM, PhD. 4th edition, 2013 – 871 p.
5. Oral cavity, Tongue, Salivary glands, Teeth / Andrea Heinzlmann. Veterinary University Department of Anatomy and Histology 2019. – 177 p.

Supporting literature:

1. 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.
2. Rabbit Anatomy: A Brief Photographic Atlas and Dissection Guide, Part 1: Muscular System // Mukhopadhyay, Soma, Ruggiero Wagner Lisa. Augusta University, 2020. http://hdl.handle.net/10675.2/622930
3. Rabbit Anatomy: A Brief Photographic Atlas and Dissection Guide, Part 2: Cardioascular System // Mukhopadhyay, Soma, Ruggiero Wagner Lisa. Augusta University, 2023 https://scholarlycommons.augusta.edu/items/1a0e2708-3848-463c-90b4-0fafdcb52f80

15. Electronic Information Resources

(Link)

1. **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=1676

16. Changes and additions

(to methodological support and recommended literature)

What is withdrawn from the work program	What is introduced into the work program	Date of consideration by the department