Ministry of Agriculture of the Russian Federation
Federal State Budgetary Educational Institution
of Higher Education
"St. Petersburg State University of Veterinary Medicine"

APPROVED BY
Vice-Rector for Educational
Work and Youth Policy
Sukhinin A.A.
April 10, 2026

Department of Animal Anatomy
EDUCATIONAL WORK PROGRAM

for the discipline

«ANIMAL ANATOMY»

The level of higher education
SPECIALIST COURSE
Specialty 36.05.01 Veterinary Medicine
Full-time education
Profile: «General clinical veterinary medicine»

Education starts in 2026

Reviewed and adopted
at the meeting of the department
March 16, 2026.
Protocol No. 9

Head of the Department
of Animal Anatomy,
Doctor of Veterinary Medicine, Professor
Shchipakin M.V.

Saint Petersburg
2026

1. AIMS AND OBJECTIVES OF THE DISCIPLINE

The main purpose of the discipline in the training of veterinarians is to provide students with fundamental morphological knowledge about a functioning, developing and adapting organism.

To achieve this goal, it is necessary to solve the following tasks:

a) The general educational task is to familiarize students in-depth with the structure of the animal organism and provides fundamental biological education in accordance with the requirements for higher educational institutions of a biological profile.

b) The applied task highlights issues related to functional, evolutionary and clinical anatomy and creates a conceptual framework for the implementation of interdisciplinary structural and logical connections in order to develop medical thinking skills.

c) A special task is to familiarize students with modern trends and methodological approaches used in anatomy to solve problems of animal husbandry and veterinary medicine, as well as existing achievements in this field.

2. 2. THE LIST OF THE PLANNED RESULTS OF THE DISCIPLINE (MODULE), CORRELATED WITH THE PLANNED RESULTS OF THE REALISED EDUCATIONAL PROGRAM

As a result of mastering the discipline, the student prepares for the following types of activities, in accordance with the educational standard of the FSE on 36.05.01 "Veterinary Medicine".

The field of professional activity:

13 Agriculture

2.1. The student's competencies formed (acquired) as a result of mastering the discipline

The education of the discipline should form the following competencies:

a) General professional competencies (GPC):

- GPC-1. Is able to determine the biological status, normal clinical signs of organs and systems of the animal body.

GPC-1 ID-1 - To know: safety precautions and personal hygiene rules during the examination of animals, methods of its fixation; schemes of clinical examination of an animal and the procedure for examination individual body systems; methodology for diagnosis of the pathological process.

GPC-1 ID-2 - To be able to: collect and analyze anamnesis data, conduct laboratory and functional studies, necessary to determine the animal biological status.

GPC-1 ID-3 – To possess practical skills: for conducting on its own a clinical examination of an animal, using classical research methods and digital technologies.

3. THE PLACE OF DISCIPLINE IN THE STRUCTURE OF THE MPEP

Discipline B1.O.07 "Animal Anatomy" refers to the mandatory part of the disciplines of the federal state educational standard of higher education in the specialty 36.05.01 "Veterinary Medicine" (specialty level), it is mastered in full-time education in the 1th, 2th and 3th semesters.

When teaching the discipline "Animal Anatomy", the knowledge and skills acquired by students during the development of the disciplines of zoology, histology and embryology, biochemistry, physiology are used. The discipline "Animal Anatomy" is the basic one on which most subsequent disciplines are based, such as:

1. Physiology and ethology of animals.
2. Cytology, histology and embryology.
3. Operative surgery with topographic anatomy.
4. Clinical diagnosis.
5. Internal non-communicable diseases.
6. Pathological anatomy and forensic veterinary examination.
7. Veterinary and sanitary examination.
8. Obstetrics and gynecology.
9. Diseases of birds.

4. THE SCOPE OF DISCIPLINE AND TYPES OF ACADEMIC WORK

4.1. The scope of the discipline for full-time education

Type of educational work	Hours	Semesters		
		1	2	3
Classroom classes (total)	**204**	**68**	**68**	**68**
Including:	-	-	-	
Lectures, including interactive forms	**102**	**34**	**34**	**34**
Practical lessons (PL), including interactive forms, among which are:	**102**	**34**	**34**	**34**
practical training (PT)	24	6	10	8
Self-study	**228**	**76**	**76**	**76**
Type of intermediate and final certification (test, exam)	Test, exam	Test	Exam	Exam
Total labor intensity hours/credits	**432/12**	**144/4**	**144/4**	**144/4**

5. THE CONTENT OF THE DISCIPLINE AND TYPES OF CLASSES

5.1. The content of the discipline (full-time education)

№	The title	Achieved competences	Semester	Types of academic work, including students' self-study and labor intensity (in hours)			
				Lectures	Practical lessons	Practical training	Self-study
1.	A brief history of the department. The museum of the department. Rules of sanitation and hygiene when working with cadaverous material. Rules for using tools	GPC-1 GPC-1 ID-1	1	2	2	-	4
2.	Areas and parts of the animal's body. Planes and directions on the animal's body. The skeleton, the departments of the skeleton. The components of the vertebra	GPC-1 GPC-1 ID-1 GPC-1 ID-2 GPC-1 ID-3	1		2	-	4
3.	The spinal column. Specific features of the structure of the vertebral column. Ribs, sternum	GPC-1 GPC-1 ID-1 GPC-1 ID-2 GPC-1 ID-3	1	2	2	-	4
4.	The skeleton of the thoracic limb	GPC-1 GPC-1 ID-1 GPC-1 ID-2 GPC-1 ID-3	1	2	2	-	4
5.	The skeleton of the pelvic limb	GPC-1 GPC-1 ID-1 GPC-1 ID-2 GPC-1 ID-3	1	2	2	-	4
6.	The brain skull	GPC-1 GPC-1 ID-1 GPC-1 ID-2 GPC-1 ID-3	1	2	2	-	4
7.	The facial skull	GPC-1 GPC-1 ID-1 GPC-1 ID-2 GPC-1 ID-3	1	2	2	-	4

8.	Connecting the bones of the axial skeleton	GPC-1 GPC-1 ID-1 GPC-1 ID-2 GPC-1 ID-3	1	2	2	-	4
9.	Joints of the bones of the thoracic limb	GPC-1 GPC-1 ID-1 GPC-1 ID-2 GPC-1 ID-3	1	2	2	-	4
10.	Joints of pelvic limb bones	GPC-1 GPC-1 ID-1 GPC-1 ID-2 GPC-1 ID-3	1	2	2	-	4
11.	Shoulder girdle muscles	GPC-1 GPC-1 ID-1 GPC-1 ID-2 GPC-1 ID-3	1	2	-	2	4
12.	Muscles of the chest and abdominal walls	GPC-1 GPC-1 ID-1 GPC-1 ID-2 GPC-1 ID-3	1	2	2	-	4
13.	Muscles of the head	GPC-1 GPC-1 ID-1 GPC-1 ID-2 GPC-1 ID-3	1	2	2	-	4
14.	Fascia and muscles of the thoracic limb	GPC-1 GPC-1 ID-1 GPC-1 ID-2 GPC-1 ID-3	1	2	-	2	4
15.	Fascia of the pelvic limb. Muscles of the hip and knee joints	GPC-1 GPC-1 ID-1 GPC-1 ID-2 GPC-1 ID-3	1	2	-	2	4

16.	Muscles of the metatarsal (hock) joint and joints of the toes	GPC-1 GPC-1 ID-1 GPC-1 ID-2 GPC-1 ID-3	1	2	2	-	4
17.	Muscles of the spinal column	GPC-1 GPC-1 ID-1 GPC-1 ID-2 GPC-1 ID-3	1	2	-	-	6
18.	Leather and its derivatives	GPC-1 GPC-1 ID-1 GPC-1 ID-2 GPC-1 ID-3	1	2	2	-	6
	TOTAL FOR THE 1TH SEMESTER			**34**	**28**	**6**	**76**
19.	The cavities of the animal's body. Division of the abdominal cavity into regions. The general plan of the structure of internal organs	GPC-1 GPC-1 ID-1 GPC-1 ID-2 GPC-1 ID-3	2	2	2	-	4
20.	The digestive apparatus. Organs of the oral cavity: lips, cheeks, gums, teeth	GPC-1 GPC-1 ID-1 GPC-1 ID-2 GPC-1 ID-3	2	2	1	-	4
21.	Hard and soft palate. The bottom of the oral cavity. Salivary glands. Tongue, pharynx, esophagus	GPC-1 GPC-1 ID-1 GPC-1 ID-2 GPC-1 ID-3	2	2	1	-	4
22.	Esophagus and single-chamber stomach	GPC-1 GPC-1 ID-1 GPC-1 ID-2 GPC-1 ID-3	2	2	2	-	4
23.	A multicameral stomach. Structure, topography	GPC-1 GPC-1 ID-1 GPC-1 ID-2 GPC-1 ID-3	2	2	2	-	4

24.	Small and large intestine. Structure, topography	GPC-1 GPC-1 ID-1 GPC-1 ID-2 GPC-1 ID-3	2	2	2	-	4
25.	Liver and pancreas. Structure, specific features	GPC-1 GPC-1 ID-1 GPC-1 ID-2 GPC-1 ID-3	2	2	2	-	4
26.	Respiratory organs. Device, features	GPC-1 GPC-1 ID-1 GPC-1 ID-2 GPC-1 ID-3	2	2	2	-	4
27.	Organs of urination. Structure, specific features	GPC-1 GPC-1 ID-1 GPC-1 ID-2 GPC-1 ID-3	2	2	2	-	4
28.	The male's reproductive organs. Structure, specific features	GPC-1 GPC-1 ID-1 GPC-1 ID-2 GPC-1 ID-3	2	2	2	-	4
29.	The reproductive organs of the female. Structure, specific features	GPC-1 GPC-1 ID-1 GPC-1 ID-2 GPC-1 ID-3	2	2	2	-	4
30.	Angiology. Blood and lymph. General characteristics of blood vessels. Arteries, veins, hemomicrocirculatory bed, lymphatic vessels. regularities of the course and branching of vessels. Circulatory circles. Features of fetal blood circulation. The pericardium. Vessels and nerves of the heart	GPC-1 GPC-1 ID-1 GPC-1 ID-2 GPC-1 ID-3	2	2	2	-	4
31.	The structure of the heart	GPC-1 GPC-1 ID-1 GPC-1 ID-2 GPC-1 ID-3	2	2	-	2	4

32.	The aortic arch and its branches, the brachiocephalic trunk. Thoracic aorta	GPC-1 GPC-1 ID-1 GPC-1 ID-2 GPC-1 ID-3	2	1	-	2	4
33.	Arteries of the head	GPC-1 GPC-1 ID-1 GPC-1 ID-2 GPC-1 ID-3	2	1	2	-	6
34.	Arteries of the thoracic limb	GPC-1 GPC-1 ID-1 GPC-1 ID-2 GPC-1 ID-3	2	2	-	2	4
35.	Abdominal aorta. Pelvic limb arteries	GPC-1 GPC-1 ID-1 GPC-1 ID-2 GPC-1 ID-3	2	2	-	2	4
36.	Venous system	GPC-1 GPC-1 ID-1 GPC-1 ID-2 GPC-1 ID-3	2	2	-	2	4
	TOTAL FOR THE 2TH SEMESTER:			**34**	**24**	**10**	**76**
37.	The lymphatic system	GPC-1 GPC-1 ID-1 GPC-1 ID-2 GPC-1 ID-3	3	2	-	-	2
38	The nervous system. General principles of structure. Division of the nervous system. Spinal cord: structure, membranes, blood supply	GPC-1 GPC-1 ID-1 GPC-1 ID-2 GPC-1 ID-3	3	2	2	-	2
39.	Membranes and vessels of the brain	GPC-1 GPC-1 ID-1 GPC-1 ID-2 GPC-1 ID-3	3	2	2	-	4

40.	The scheme of division of the brain. The structure of the rhomboid brain	GPC-1 GPC-1 ID-1 GPC-1 ID-2 GPC-1 ID-3	3	2	2	-	4
41.	The structure of the middle and intermediate brain	GPC-1 GPC-1 ID-1 GPC-1 ID-2 GPC-1 ID-3	3	2	2	-	4
42.	The structure of the finite brain	GPC-1 GPC-1 ID-1 GPC-1 ID-2 GPC-1 ID-3	3	2	2	-	4
43.	Principles of the peripheral nervous system. The structure and topography of the cervical and thoracic spinal nerves	GPC-1 GPC-1 ID-1 GPC-1 ID-2 GPC-1 ID-3	3	2	-	2	4
44.	The structure and topography of the lumbar, sacral and caudal spinal nerves	GPC-1 GPC-1 ID-1 GPC-1 ID-2 GPC-1 ID-3	3	2	-	2	4
45.	The structure and topography of cranial nerves. I – V pairs of cranial nerves	GPC-1 GPC-1 ID-1 GPC-1 ID-2 GPC-1 ID-3	3	2	-	2	4
46.	VI – XII pairs of cranial nerves	GPC-1 GPC-1 ID-1 GPC-1 ID-2 GPC-1 ID-3	3	2	-	2	4
47.	Characteristics of the autonomic nervous system. The sympathetic part of the autonomic nervous system	GPC-1 GPC-1 ID-1 GPC-1 ID-2 GPC-1 ID-3	3	2	2		4

48.	The parasympathetic part of the autonomic nervous system	GPC-1 GPC-1 ID-1 GPC-1 ID-2 GPC-1 ID-3	3	2	2		4
49.	The senses. Visual analyzer. The structure of the eyeball	GPC-1 GPC-1 ID-1 GPC-1 ID-2 GPC-1 ID-3	3	2	2		4
50.	Auxiliary organs of the eye. Pathways and brain centers of the visual analyzer	GPC-1 GPC-1 ID-1 GPC-1 ID-2 GPC-1 ID-3	3	2	2		4
51.	A statoacoustic analyzer. The structure of the outer and middle ear	GPC-1 GPC-1 ID-1 GPC-1 ID-2 GPC-1 ID-3	3	2	2		4
52.	The inner ear. Pathways and brain centers of the statoacoustic analyzer. Organs of taste and smell	GPC-1 GPC-1 ID-1 GPC-1 ID-2 GPC-1 ID-3	3	2	2		4
53.	The apparatus of movement and the skin of a bird	GPC-1 GPC-1 ID-1 GPC-1 ID-2 GPC-1 ID-3	3	2	2		4
54.	Features of the structure of the digestive organs, respiration, urination, reproduction, cardiovascular, lymphatic and nervous systems, endocrine glands of poultry	GPC-1 GPC-1 ID-1 GPC-1 ID-2 GPC-1 ID-3	3	-	2		6
55.	Organs of blood formation and immunogenesis, endocrine glands	GPC-1 GPC-1 ID-1 GPC-1 ID-2 GPC-1 ID-3	3	-	-		6
	TOTAL FOR THE 3TH SEMESTER			**34**	**26**	**8**	**76**

6. THE LIST OF EDUCATIONAL AND METHODOLOGICAL SUPPORT FOR STUDENTS' SELF WORK

Correct organization and planned self – work stimulate research and creative activity of students. Self-work should be understood not only as the ability to make independent conclusions and to apply the knowledge, gained in practice, but also as the ability to organize their activities without outside help.

6.1. Guidelines for self -work

1. Nurushev, M. J. Anatomy of domestic animals (in figures and tables): textbook / M. J. Nurushev, M. M. Omarov. Pavlodar: Brand Print, 2010. 174 p.

6.2. Literature for self-work

1. Akaevsky, Anatoly Ivanovich. Anatomy of domestic animals / Akaevsky Anatoly Ivanovich, Yudichev Yuri Fedorovich, Seleznev Sergey Borisovich; Edited by B.S. Seleznev. - 5th ed., revised and additional - M.: Aquarium-Print, 2005. - 640 p.

2. Dzerzhinsky, Felix Yanovoch. Comparative anatomy of vertebrates: Textbook for students. universities / Felix Dzerzhinsky Yanovoch; Lomonosov Moscow State University. - 2nd ed., ispr., revised. and add. - M.: Aspect Press, 2005. - 304 p.

3. Zelenevsky, N. V. Anatomy of dogs and cats: [recommended by the Ministry of Agriculture of the Russian Federation]: textbook for students of higher educational institutions / N. V. Zelenevsky, G. A. Khonin. - 2nd ed. - St. Petersburg, 2009. - 344 p.

7. THE LIST OF BASIC AND ADDITIONAL LITERATURE NECESSARY FOR THE EDUCATION OF THE DISCIPLINE

7.1. Basic literature

1. Zelenevsky, N. V. Practicum on veterinary anatomy: textbook: in 3 volumes. Vol. 1. Somatic systems / N. V. Zelenevsky. - St. Petersburg: ISOT: NICK, 2007. - 304 p.: ill. - URL: https://search.spbguvm.informsystema.ru/viewer.jsp?aWQ9MzI3JnBzPTE1Mw = (date of access: 03/16/2026). - Access mode: for authorization. EB SPbGUVM users.

2. Zelenevsky, N. V. Practicum on veterinary anatomy: recommended by the Ministry of Agriculture of the Russian Federation as a textbook for university students in the fields of Veterinary medicine and Veterinary and sanitary expertise. Vol. 2. Splanchnology and angiology / N. V. Zelenevsky. - 3rd ed., revised and add. - St. Petersburg: Logos, 2006. - 160 p. - URL: https://search.spbguvm.informsystema.ru/viewer.jsp?aWQ9MzQ3JnBzPTgx (date of request: 03/16/2026). - Access mode: for authorization. EB SPbGUVM users.

3. Zelenevsky, N.V. Practicum on veterinary anatomy: textbook for university students. Vol. 3. Neurology. Sensory organs. Features of the structure of poultry / N. V. Zelenevsky, A. A. Stekolnikov, K. V. Plemyashov; under the general editorship of N. V. Zelenevsky. - St. Petersburg: Logos, 2005. - 132 p. - URL: https://search.spbguvm.informsystema.ru/viewer.jsp?aWQ9NDExJnBzPTY4 (date of request: 03/16/2026). - Access mode: for authorization. EB SPbGUVM users.

7.2. Additional literature

1. Klimov, A. F. Anatomy of domestic animals: textbook / A. F. Klimov, A. I. Akaevsky. - 8th ed., erased. Saint Petersburg: Lan Publ., 2011. 1040 p. (Textbooks for universities. Special literature).

2. Vrakin, V. F. Morphology of farm animals. Anatomy with the basics of cytology, embryology and histology: a textbook for universities / V. F. Vrakin, M. V. Sidorova. - St. Petersburg: Quadro, 2022. - 528 p. - URL: https://elibrica.com/af3a328a-b733-40a7-b073-ec160fc1fcbd (date of request: 03/16/2026). - Access mode: for authorization. users of the Elibrica EBS.

3. Anatomy of the horse: a textbook for university students / A. A. Stekolnikov, F. I. Vasilevich, N. V. Zelenevsky [et al.]; under the general editorship of N. V. Zelenevsky. - Saint

Petersburg: Prospekt Nauki, 2024. - 592 p. - URL: https://www.prospektnauki.ru/ebooks/books/analo.php (date of request: 03/16/2026). - Access mode: for authorization. users of the EBS "Prospekt Nauki".

8. THE LIST OF RESOURCES OF THE INFORMATION AND TELECOMMUNICATION NETWORK "INTERNET" NECESSARY FOR EDUCATION OF THE DISCIPLINE

To prepare for laboratory classes and perform self-work, students can use the following online resources:

1. https://meduniver.com – Medical information site
2. http://vanat.cvm.umn.edu – Animal Anatomy University of Minnesota

Electronic library systems

1. ELS "SPBGUVM"
2. University information system "RUSSIA"
3. Full-text database POLPRED.COM
4. Scientific electronic Library ELIBRARY.RU
5. Russian Scientific Network
6. Full-text interdisciplinary database on agricultural and environmental sciences ProQuest AGRICULTURAL AND ENVIRONMENTAL SCIENCE DATABASE
7. Electronic books of the publishing house "Prospekt Nauki" http://prospektnauki.ru/ebooks/
8. Collection "Agriculture. Veterinary medicine" publishing house "Quadro" ELS "Elibris" publishing house "Quadro" https://elibrica.com/

9. METHODOLOGICAL GUIDELINES FOR STUDENTS ON EDUCATION OF THE DISCIPLINE

Methodological recommendations for students are a set of recommendations and explanations that allow them organize the process of studying this discipline optimally.

The content of methodological recommendations, as a rule, may include:

• Tips on planning and organizing the time needed to study the discipline. Description of the sequence of actions of the student, or the "scenario of studying the discipline".

Morning time is the most effective for academic work (from 8-14 hours), followed by afternoon time (from 16-19 hours) and evening time (from 20-24 hours). The most difficult material is recommended to be studied at the beginning of each time interval after rest. After 1.5 hours of work, a break is required (10-15 minutes), after 4 hours of work, the break should be 1 hour. Part of the scientific organization of labor is the master of the technique of mental labor. Normally, a student should devote about 10 hours a day to studying (6 hours at university, 4 hours at home).

The methodology of work when taking notes of oral presentations differs significantly from the methodology of work when taking notes of written sources.

By taking notes of written sources, the student has the opportunity to read again the desired passage of the text, reflect on it, highlight the main thoughts of the author, briefly formulate them, and then write them down. If necessary, he can also note his attitude to this point of view. Listening to the lecture, the student should transist most of the complexity of the above–mentioned works for another time, trying to use every minute to record the lecture, and not to comprehend it - there is no time left for this. Therefore, when taking notes of a lecture, it is recommended, to leave separate fields on each page for subsequent entries in addition to the summary.

After recording a lecture or making a summary of it, you should not leave work on the lecture material before preparing for the test. It is necessary to do as early as possible the work

that accompanies takimg notes of written sources, the last could not be done during the recording of the lecture - read your notes, deciphering individual abbreviations, analyze the text, establish logical connections between its elements, in some cases show them graphically, highlight the main thoughts, mark issues, requiring additional processing, in particular, the teacher's consultations.

When working on the text of the lecture, the student should pay special attention to the problematic issues, raised by the teacher, during the lecture, as well as to his assignments and recommendations.

For each lecture, practical lesson and laboratory work, classification cod, topic, list of issues under consideration, volume in hours and links to recommended literature are provided. For classes conducted in interactive forms, its organizational form should be indicated: computer simulation, business or role-playing game, analysis of a specific situation, etc.

• Recommendations for preparing for practical classes

Practical (seminar) classes are an important part of the professional training of students. The main purpose of conducting practical (seminar) classes is to form students' analytical, creative thinking through the acquisition of practical skills. Practical classes are also conducted in order to deepen and consolidate the knowledge gained in lectures and in the process of independent work on normative documents, educational and scientific literature. For student, it is necessary, to study or repeat theoretical material on a given topic when preparing for a practical lesson for students.

When preparing for a practical lesson, the student is recommended to follow the following algorithm;

1) get acquainted with the plan of the upcoming lesson;

2) study the literature sources that have been recommended and familiarize yourself with the introductory notes to the relevant sections.

Methodological guidelines for practical (seminar) classes in the discipline, along with the work program and schedule of the educational process, refer to methodological documents that determine the level of organization and quality of the educational process.

The content of practical (seminar) classes is recorded in the working curricula of the disciplines in the sections "List of topics of practical (seminar) classes".

The most important component of any form of practical training are tasks. The basis of the task is an example that is understood from the standpoint of the theory developed in the lecture. As a rule, the main attention is paid to the formation of specific skills, which determines the content of students' activities - problem solving, laboratory work, clarification of categories and concepts of science, which are a prerequisite for correct thinking and speech.

Practical (seminar) classes perform the following tasks:

- stimulate regular study of recommended literature, as well as attentive attitude to the lecture course;
- consolidate the knowledge gained in the process of lecture training and independent work on literature;
- expand the scope of professionally significant knowledge, skills, and abilities;
- allow you to verify the correctness of previously acquired knowledge;
- initiate skills of independent self-thinking, oral presentation;
- contribute to the free use of terminology;
- provide the teacher with the opportunity to systematically monitor the level of independent work of students.

Methodological guidelines for practical (seminar) classes on the discipline should be focused on modern business conditions, current regulatory documents, advanced technologies, the latest achievements of science, technology and practice, modern ideas about certain phenomena, the studied reality.

• Recommendations for working with literature.

Working with literature is an important stage of the student's self-work on mastering the subject, contributing not only to the consolidation of knowledge, but also to the expansion of

horizons, mental abilities, memory, the ability to think, express and confirm personal hypotheses and ideas. In addition, the skills of research work necessary for further professional activityare developed.

When starting to study the literature on the topic, it is necessary to make notes, extracts, notes. It is mandatory to take notes of the works of theorists, which allow us to comprehend the theoretical basis of the study. For the rest, you can limit yourself to summary from the studied sources. All summaries and quotations must have the exact "return address" (author, title of the work, year of publication, page, etc.). It is advisable to write an abbreviated title of the question to which the extract or quotation refers. In addition, it is necessary to learn how to immediately compile a file of special literature and publications of sources, both proposed by the teacher and identified independently, as well as refer to bibliographic reference books, chronicles of journal articles, book chronicles, abstract journals. At the same time, publications of sources (articles, book titles, etc.) should be written on separate cards, which must be filled in according to the rules of bibliographic description (surname, initials of the author, title of the work. Place of publication, publisher, year of publication, number of pages, and for journal articles – the name of the journal, year of publication, page numbers). On each card, it is advisable to record the thought of the author of the book or a fact from this book on only one specific issue. If the work, even in the same paragraph or phrase, contains more judgments or facts on another issue, then they should be written out on a separate card. The presentation should be concise, accurate, without subjective assessments. On the back of the card, you can make your own notes about this book or article, its content, structure, on which sources it is written, etc.

• Explanations about working with control and test materials for the course, recommendations for completing homework.

Testing is a conrol that allows you to determine whether the actual behavior of the program corresponds to the expected one by performing a specially selected set of tests. A test is the fulfillment of certain conditions and actions necessary to verify the operation of the function under test or part of it. Each question in the discipline must be answered correctly by choosing one option.

10. EDUCATIONAL WORK

As part of the implementation of the discipline, educational work is carried out to form a modern scientific worldview and a system of basic values, the formation and development of spiritual and moral, civil and patriotic values, a system of aesthetic and ethical knowledge and values, attitudes of tolerant consciousness in society, the formation of students' need for work as the first vital necessity, the highest value and the main way to achieve success in life, to realize the social significance of your future profession.

11. THE LIST OF INFORMATION TECHNOLOGIES USED IN THE IMPLEMENTATION OF THE EDUCATIONAL PROCESS

11.1. Information technologies for the educational process of the discipline is previewed the use of information technologies:

- practical classes using multimedia;
- interactive technologies (dialogues, collective discussion on various topics for realization a particular educational and professional task);
- interaction with students via e - mail;
- community work in the electronic information and educational environment of St. Petersburg State University: https://spbguvm.ru/academy/eios/

11.2. 11.2. Software

The list of licensed and free- distributed software, including national programs

№ п/п	Technical and computer programs recommended by sections and topics of the program	License
1	MS PowerPoint	67580828
2	LibreOffice	free software
3	OS Alt Education	AAO.0022.00
4	ABIS " MARK-SQL"	02102014155
5	MS Windows 10	67580828
6	System Consult Plus	503/КЛ
7	Android OS	free software

12. THE MATERIAL AND TECHNICAL BASE NECESSARY FOR THE IMPLEMENTATION OF THE DISCIPLINE EDUCATIONAL PROCESS

The title of the discipline (module), practice in accordance with the curriculum	**The title of special rooms and rooms for self-work**	**Equipment of special rooms and rooms for self-work**
Animal anatomy	103 (196084, St. Petersburg, Chernihiv str., 5) Classroom for conducting seminar-type classes, group and individual consultations, ongoing monitoring and intermediate certification	*Specialized furniture:* desks, chairs, stools, blackboard, aluminum trays. *Visual aids and educational materials:* bone, muscle, vascular preparations; posters on sections of anatomy.
	104 (196084, St. Petersburg, Chernihiv str., 5) Classroom for conducting seminar-type classes, group and individual consultations, ongoing monitoring and intermediate certification.	*Specialized furniture:* desks, chairs, stools, blackboard, aluminum trays. *Visual aids and educational materials:* bone, muscle, vascular preparations; posters on sections of anatomy.
	110 (196084, St. Petersburg, Chernihiv str., 5) Classroom for conducting seminar-type classes, group and individual consultations, ongoing monitoring and intermediate certification.	*Specialized furniture:* desks, chairs, stools, blackboard, aluminum trays. *Visual aids and educational materials:* bone, muscle, vascular preparations; posters on sections of anatomy.
	105 (196084, St. Petersburg, Chernihiv str., 5) Classroom for conducting seminar-type classes, group and individual consultations, ongoing monitoring and intermediate certification.	*Specialized furniture:* desks, chairs, stools, blackboard, aluminum trays. *Visual aids and educational materials:* bone, muscle, vascular preparations; posters on sections of anatomy.
	106 (196084, St. Petersburg, Chernihiv str., house 5) Educational laboratory of the department.	*Specialized furniture:* autopsy table, aluminum trays, stainless steel sink, containers. *Technical training tools:* electronic floor scales, table scales, caliper, drill, screwdriver, freezer type Chest, *Visual aids and educational materials:* bone, muscle, vascular

		preparations; wet preparations, posters on sections of anatomy.
	205 (196084, St. Petersburg, Chernihiv str., house 5) Museum of the department, room for intermediate certification.	*Specialized furniture:* desks, chairs. *Technical training facilities:* multimedia projector, screen, laptop. *Visual aids and educational materials:* bone, muscle, vascular preparations; wet preparations, posters on sections of anatomy.
	206 Large reading room (196084, St. Petersburg, Chernihiv str., house 5) Room for independent work.	*Specialized furniture:* tables, chairs *Technical means of education:* computers connected to the Internet and access to an electronic information and educational environment.
	214 Small reading room (196084, St. Petersburg, Chernihiv str., house 5) Room for independent work.	*Specialized furniture:* tables, chairs *Technical means of education:* computers connected to the Internet and access to an electronic information and educational environment.
	324 Information Technology Department (196084, St. Petersburg, Chernihiv str., house 5) Room for storage and preventive maintenance of educational equipment.	*Specialized furniture:* tables, chairs, special equipment, materials and spare parts for preventive maintenance of technical training facilities.
	Box No. 3 Carpentry workshop (196084, St. Petersburg, Chernihiv str., house 5) A room for storage and preventive maintenance of educational equipment.	*Specialized furniture:* tables, chairs, special equipment, materials for preventive maintenance of specialized furniture.

Developers:

Head of the Department of Animal Anatomu, Doctor of Veterinary Medicine, Professor — Shchipakin M.V.

Associate Professor of the Department of Animal Anatomy, Candidate of Veterinary Sciences — Stratonov A.S.

Annex 1

Ministry of Agriculture of the Russian Federation
Federal State Budgetary Educational Institution
of Higher Education
"Saint Petersburg State University of Veterinary Medicine"

Department of Animal Anatomy

FUND OF ASSESMENT TOOLS
for the discipline
"ANIMAL ANATOMY"

Level of higher education
SPECIALIST COURSE

Specialty 36.05.01 Veterinary medicine
Full-time education
Profile: «General clinical veterinary medicine»

Education starts in 2026

Saint Petersburg
2026

1. PASSPORT OF THE FUND OF ASSESMENT TOOLS

№	Acquired competence	Assessed modules of a discipline	Assesment tool
1	GPC-1 GPC-1 ID -1 GPC-1 ID – 2 GPC-1 ID - 3	Section 1. Osteology	Colloquium, tests
2		Section 2. Arthrology	Colloquium, tests
3		Section 3. Mythology	Colloquium, tests
4		Section 4. Dermatology	Colloquium, tests
5		Section 5. Splanchnology	Colloquium, tests
6		Section 6. Angiology	Colloquium, tests
7		Section 7. Housing and communal services	Report
8		Section 8. Nervous system	Colloquium, tests
9		Section 9. Sensory organs	Colloquium, tests
10		Section 10. Anatomy of poultry	Colloquium, tests

List of assessment tools

№	Name of the assessment tool	Brief description of the assesment tool	Presentation of the assessment tool in the fund
1.	Seminar	A means of control is organized as a conversation between the teacher and the student on topics related to the discipline, and designed to clarify the amount of knowledge that students have on a certain module, topic, problem, etc. May be conducted in written form.	Questions on topics/modules of the discipline presented in relation to the competencies provided by the work program of the discipline
2.	Test	A system of standardized tasks, which allows to automate the assessment of students' knowledge and skills	A fund of test assignments
3.	Report, Presentation	A product of a student's self-work, which is presented as a public speech presenting the results of doing a research on a specific educational, practical, educational or scientific topic. May be done in PowerPoint presentation format	Topics of reports

3. A LIST OF CONTROL TASKS AND OTHER MATERIALS, NECESSARY FOR THE ASSESSMENT OF KNOWLEDGE, SKILLS AND WORK EXPERIENCE

3.1. Typical tasks for the current control of academic progress

3.1.1 Questions for the seminar

Questions for competence assessment:

GPC-1 – Is able to determine the biological status, normal clinical signs of organs and systems of the animal body.

GPC-1 ID-1 To know: safety precautions and personal hygiene rules during the examination of animals, methods of its fixation; schemes of clinical examination of an animal and the procedure for examination individual body systems; methodology for diagnosis of the pathological process.

GPC-1 ID-2 To be able to: collect and analyze anamnesis data, conduct laboratory and functional studies, necessary to determine the animal biological status.

GPC-1 ID-3 To possess practical skills: for conducting on its own a clinical examination of an animal, using classical research methods and digital technologies.

According to the section Osteology:

1. Planes and directions on the animal's body.
2. The typical structure of the vertebra.
3. Cervical vertebrae, structure and specific features.
4. Thoracic vertebrae, structure and specific features.
5. Lumbar vertebrae, structure and specific features.
6. Sacral and caudal vertebrae, structure and specific features.
7. Ribs and sternum, structure and specific features.
8. Facial skull: lacrimal and zygomatic bones.
9. Facial skull: palatine, incisor and mandibular bones.
10. Facial skull: upper jaw, nasal bones, hyoid bone.
11. The cerebral skull: occipital and frontal bones.
12. Cerebral skull: sphenoid bone.
13. Cerebral skull: temporal bone.
14. The cerebral skull: the parietal and intertribal bones.
15. Cerebral skull: latticework and pterygoid bones.
16. The belt of the bones of the thoracic limb, structure, specific features.
17. The skeleton of the thoracic limb: humerus, structure, specific features.
18. Skeleton of the thoracic limb: bones of the forearm, structure, specific features.
19. Skeleton of the thoracic limb: wrist bones, structure, specific features.
20. Skeleton of the thoracic limb: bones of the pastern and phalanges of the fingers, structure, specific features.
21. Pelvic limb bone belt, structure, specific features.
22. The skeleton of the pelvic limb: femur, structure, specific features.
23. The skeleton of the pelvic limb: shin bones, structure, specific features.
24. The skeleton of the pelvic limb: bones are flattened, structure, specific features.
25. The skeleton of the pelvic limb of the limb: bones of the metatarsal and phalanges of the fingers, structure, specific features.

According to the section Arthrology:

1. Types of bone connections. The anatomical structure of the joint.
2. Classification of joints. Types of synarthrosis.

3. Connecting the bones of the axial skeleton: connecting the vertebrae to the skull and to each other.

4. Connecting the bones of the axial skeleton: connecting the bones of the skull.

5. Connecting the bones of the axial skeleton: connecting the ribs to the vertebrae, ribs to the sternum.

6. Connection of the bones of the thoracic limb: shoulder joint, elbow joint.

7. The connection of the bones of the thoracic limb: the carpal joint.

8. The connection of the bones of the thoracic limb: the joints of the fingers of the hand.

9. Connection of the bones of the pelvic limb: sacroiliac joint, connection of the pelvic bones.

According to the section myology and dermatology:

1. Muscle as an organ.
2. Auxiliary organs of muscles.
3. The muscles of the shoulder girdle.
4. Neck muscles.
5. Muscles of the spinal column.
6. Chest wall muscles: expiratory muscles.
7. Chest wall muscles: inspiratory muscles.
8. The diaphragm.
9. Abdominal wall muscles.
10. Facial muscles.
11. Chewing muscles.
12. Muscles of the pectoral limb: muscles of the shoulder joint.
13. Muscles of the pectoral limb: muscles of the elbow joint.
14. Muscles of the pectoral limb: muscles of the wrist joint.
15. Muscles of the pectoral limb: muscles of the joints of the fingers of the hand.
16. Pelvic limb muscles: hip joint muscles.
17. Pelvic limb muscles: knee joint muscles.
18. Pelvic limb muscles: muscles of the metatarsal joint.
19. Pelvic limb muscles: muscles of the joints of the toes.
20. Skin structure: epidermis, dermis, subcutaneous layer.
21. Derivatives of the skin: hair, crumb, horns.
22. Derivatives of the skin: hoof, hoof, claw.
23. Glandular formations of the skin.
24. Sebaceous and sweat glands, structure and specific features.
25. Mammary gland, structure and specific features.

According to the section digestive organs:

1. Oral cavity: lips, cheeks, gums, teeth.
2. Hard and soft palate, salivary glands.
3. The bottom of the mouth, the tongue.
4. Pharynx, structure and specific features.
5. Esophagus, structure and specific features.
6. Classification of stomachs.
7. Single-chamber stomach, structure and specific features.
8. The stomach of a horse.
9. Pig's stomach.
10. The dog's stomach.
11. Multicameral stomach, structure and specific features.
12. Topography of the chambers of the multicameral stomach.
13. The general outline of the structure of the small intestine.

14. The small intestine of a domestic bull.
15. The small intestine of a horse.
16. Pig's small intestine.
17. The small intestine of a dog.
18. The general outline of the structure of the colon.
19. The colon of a domestic bull.
20. The caecum of a horse.
21. The colon of a horse.
22. The large intestine of a pig.
23. The dog's colon.
24. Rectum and anal canal.
25. Liver, structure and specific features.
26. Pancreas, structure and specific features.

According to the section organs of respiration, urination and reproduction:

1. Nose, nasal cavity, structure and specific features.
2. Larynx, structure and specific features.
3. Trachea, structure and specific features.
4. Bronchial tree, intra-pulmonary branching, the structure of the bronchial wall and bronchioles.
5. Lungs: surfaces, edges, crevices, furrows, lobes.
6. Lungs: internal structure. Specific features.
7. Pleura and pleural cavity.
8. Classification of kidneys.
9. Kidneys: skeletotopia, syntopia, fixation apparatus.
10. The external structure of the kidney, features of blood supply.
11. The structural and functional unit of the kidney.
12. Ureters: structure and topography.
13. The bladder: structure and topography.
14. Urethra, structure and topography.
15. Ovaries, structure and specific features.
16. Fallopian tube, structure and specific features.
17. Classification of queens.
18. Uterus, structure and specific features.
19. Cervix, structure and specific features.
20. Vagina, vestibule of the vagina, vulva.
21. Testis, an appendage of the testis. Structure and specific features.
22. Testicular sac, structure and specific features.
23. The spermatic cord, structure and specific features.
24. Accessory sex glands, genitourinary canal.
25. Penis and prepuce. Structure and specific features.

According to the section angiology:

1. Regularities of the course and branching of vessels.
2. The structure of the wall of arteries and veins.
3. Liquid tissues of the body. Hemomicrocirculatory bed.
4. Large and small circles of blood circulation.
5. Features of fetal blood circulation.
6. Macroscopic structure of the heart.
7. Atria, wall structure, specific features.
8. Ventricles, wall structure, specific features.
9. The valvular apparatus of the heart.

10. Vessels and nerves of the heart.
11. The conduction system of the heart.
12. The structure of the pericardium.
13. The aortic arch and the brachiocephalic trunk. Specific features.
14. Internal carotid artery, specific features.
15. Branches of the external carotid artery.
16. Branches of the maxillary artery.
17. Vascularization of the shoulder area.
18. Vascularization of the forearm area,
19. Vascularization of the hand area.
20. Vascularization of the hip area.
21. Vascularization of the shin area.
22. Vascularization of the foot area.
23. Thoracic aorta and its branches.
24. The abdominal aorta and its branches.
25. Branches of the internal iliac artery.
26. Veins of the large circulatory system.
27. Portal vein and its branches.
28. Veins of the small circle of blood circulation.
29. Lymphatic system, composition and functions.
30. Lymphatic vessels, nodes, ducts. Structure and topography.

According to the section central nervous system:
1. Principles of the structure of the nervous system. Division of the nervous system.
2. The membranes and spaces of the spinal cord and brain.
3. Spinal cord, structure and vascularization.
4. Vascularization of the brain.
5. The brain: white and gray matter. Division into departments.
6. Rhomboid brain.
7. Posterior brain.
8. The middle brain.
9. Epithalamus.
10. The thalamus.
11. Hypothalamus.
12. The olfactory brain.
13. Cloak, structure and specific features.
14. Basal nuclei of the terminal brain.
15. The ventricles of the brain.
16. The brain stem.
17. Cranial nerve nuclei.
18. Vascular covers of the ventricles of the brain, cerebrospinal fluid.
19. Cerebellum, gray and white matter, legs and sails.
20. Hippocampus: gray and white matter.
21. The pathways of the brain.
22. Furrows of the cerebral cortex: the general outline of the structure and features.
23. The cerebral cortex.
24. The white matter of the brain.
25. Sources of blood supply to the brain and spinal cord.

According to the section peripheral nervous system:
1. The composition and functions of the peripheral nervous system.
2. The structure of the spinal nerve and its branches. Neurotic.

3. Cervical spinal nerves and their branches.
4. Brachial plexus: formation of veins.
5. Innervation of the pectoral limb muscles.
6. Innervation of the skin of the thoracic limb.
7. Thoracic spinal nerves: branches and areas of innervation.
8. Lumbar plexus: formation and branches.
9. Nerves of the lumbar plexus and their innervation areas.
10. Sacral plexus: formation and branches.
11. Nerves of the sacral plexus and their innervation areas.
12. Innervation of the pelvic limb muscles.
13. Innervation of the pelvic limb skin.
14. I-IV pair of cranial nerves.
15. V, VI pair of cranial nerves.
16. VII pair of cranial nerves.
17. VIII, IX, XI, XII pair of cranial nerves.
18. Vagus and its branches.
19. Composition and functions of the autonomic nervous system.
20. Sympathetic nervous system.
21. The parasympathetic nervous system.
22. Visceral plexuses and nodes of the head and neck.
23. Visceral plexuses and nodes of the thoracic cavity.
24. Visceral plexuses and nodes of the abdominal cavity and pelvic cavity.
25. Features of the structure of the reflex nervous arch in the autonomic nervous system.

According to the section sensory organs and bird anatomy:

1. Receptors: classification and structure.
2. The outer and middle ear.
3. The inner ear.
4. Pathways and centers of the auditory analyzer.
5. Conducting paths and centers of the equilibrium analyzer.
6. The fibrous membrane of the eyeball.
7. The vascular membrane of the eyeball.
8. The retina.
9. Refractive media of the eyeball.
10. Accommodation apparatus of the eyeball.
11. Muscles and fascia of the eyeball. Periorbitis.
12. The pathways and nerve centers of the visual analyzer.
13. Eyelids, lacrimal apparatus.
14. Features of the structure of the visual analyzer of representatives of animals of different orders.
15. Differences between the skeleton of the head of birds and domestic animals.
16. Skeletal structures of the neck and thoracic region of birds.
17. The structure of the shoulder girdle and free pectoral limbs of birds.
18. The structure of the pelvic girdle and free pelvic limbs of birds.
19. The structure of the intestines of birds.
20. The structure of the urinary tract of birds.
21. The structure of the respiratory organs of birds.
22. The structure of the reproductive system of birds.
23. Features of the structure of the circulatory organs of birds.
24. Features of the structure of the organs of hearing and vision of birds.
25. The structure of the skin and its derivatives of birds.

3.1.2 Topics for preparation of reports

Topics of abstracts for competence assessment: GPC-1 – Is able to determine the biological status, normal clinical signs of organs and systems of the animal body.

GPC-1 ID-1 To know: safety precautions and personal hygiene rules during the examination of animals, methods of its fixation; schemes of clinical examination of an animal and the procedure for examination individual body systems; methodology for diagnosis of the pathological process.

GPC-1 ID-2 To be able to: collect and analyze anamnesis data, conduct laboratory and functional studies, necessary to determine the animal biological status.

GPC-1 ID-3 To possess practical skills: for conducting on its own a clinical examination of an animal, using classical research methods and digital technologies.

According to the section endocrine glands, organs of blood formation and immunogenesis:

1. The origin and main functions of the organs of blood formation and the immune system.
2. Red bone marrow, structure and specific features.
3. Yellow bone marrow, structure and specific features.
4. Thymus, structure and specific features.
5. Tonsils, structure and specific features.
6. Lymphoid (Peyer's) plaques, structure and specific features.
7. Lymph nodes, structure and specific features.
8. Lymph nodes of cattle.
9. Lymph nodes of the horse.
10. Lymph nodes of a pig.
11. Lymph nodes of a goat.
12. Spleen, structure and specific features.
13. Specific features of the structure of the spleen in commercial animals
14. Hormones, classification and their properties.
15. Pituitary gland, structure and specific features.
16. The main hormones of the adenohypophysis, and their functions.
17. The main hormones of the neurohypophysis, their functions.
18. Epiphysis, structure and specific features.
19. Thyroid gland, structure and specific features.
20. Parathyroid glands, structure and specific features.
21. Adrenal glands, structure and specific features.
22. Pancreatic islets of the pancreas, structure and specific features.
23. Ovaries - female sex glands, structure and specific features.
24. Testes - male sex glands, structure and specific features.
25. The structure of hormones and their structure.

3.1.3 Test-questions

Competency assessment tests:

GPC-1 – Is able to determine the biological status, normal clinical signs of organs and systems of the animal body.

GPC-1 ID-1 To know: safety precautions and personal hygiene rules during the examination of animals, methods of its fixation; schemes of clinical examination of an animal and the procedure for examination individual body systems; methodology for diagnosis of the pathological process.

Tasks of a combined type with the choice of one correct answer from the suggested options GPC -1.1. To know safety techniques and personal hygiene rules when examining animals, methods of their fixation; schemes of clinical examination of an animal and the

procedure for examining individual body systems, including using digital technologies; methodology for recognizing the pathological process.

Task 1.
How is it necessary to open an animal's corpse according to safety regulations?
1. without gloves;
2. wearing gloves;
3. without gloves, after washing your hands with soap;
4. It doesn't matter.
Answer: 2

Task 2.
Which corpses are forbidden to dissect?
1. Corpses of animals that have fallen for unknown reasons;
2. corpses of farm animals;
3. corpses of animals that died from non-communicable diseases;
4. Corpses of dogs.
Answer: 1

GPC-1.2. Be able to collect and analyze anamnestic data, conduct laboratory and functional studies using digital computer technologies necessary to determine the biological status of animals.

Task 3.
What is the characteristic of the hip joint?
1. Simple, uniaxial;
2. Complex, biaxial;
3. Simple, multi-axis;
4. Complex multi-axis.
Answer: 3

Task 4.
Which vessel exits the left ventricle of the heart?
1. Cranial vena cava;
2. the aorta;
3. the pulmonary trunk;
4. Pulmonary arteries.
Answer: 2

Task 5.
Which animal's uterine endometrium is characterized by the presence of caruncles?
1. Cows;
2. mares;
3. sows;
4. Bitches.
Answer: 1

Closed-type compliance assignments

Task 6
Correlate the number of vertebrae in a domestic bull and the department of the spinal column:

Vertebrae	Number

1	vertebrae cervicales	А	seven vertebrae
2	vertebrae lumbales	Б	five vertebrae
3	vertebrae thoracicae	В	thirteen vertebrae
4	vertebrae caudales	Г	six vertebrae
5	vertebrae sacrales	Д	twenty vertebrae

Answer: 1A 2G 3B 4D 5B

Task 7

Correlate the type of stomach with the type of animal:

type of stomach		animal	
1	ironless	А	horse
2	mixed	Б	The bull is a domestic
3	ferruginous	В	echidna
4	multi-chambered	Г	dog

Task 8

Establish a correspondence between the stomach sections of ruminants and their functions:

the stomach sections		functions	
1	rumen	А	Water suction
2	reticulum	Б	Sorting and chopping food
3	omasum	В	Enzymatic digestion
4	abomasum	Г	Fermentation of fiber

Answer: 1Г 2Б 3А 4В

Task 9

Establish a correspondence between the types of fabrics and their characteristics:

the types of fabrics		their characteristics	
1	epithelial	А	Contraction and movement
2	connective tissue	Б	Protection and suction
3	muscular	В	Transmission of nerve impulses
4	nervous	Г	Support and transport function

Answer: 1Б 2Г 3А 4В

GPC-1.3. Possess practical skills to independently conduct a clinical examination of an animal using classical research methods and digital technologies.

Task 10

Establish a correspondence between the departments of the skeleton and their functions:

the skeleton		their functions	
1	Skull	А	Ensuring movement
2	The chest	Б	Support and protection of the spinal cord
3	The spinal column	В	Protection of the heart and lungs
4	The skeleton of the limbs	Г	Brain protection

Answer: 1Г 2Б 3В 4А

Closed-type tasks for establishing the sequence

Task 11

Can you restore the correct anatomical structure of the horse's digestive system?

1. Stomach;
2. a sip;
3. the cecum
4. jejunum;
5. the oral cavity;
6. The Ileum;
7. The esophagus;
8. the colon
9. the duodenum;
10. The rectum.

The answer: 5 2 7 1 9 4 6 3 8 10.

Task 12
Establish the correct sequence of spinal column sections:
1. Sacral region;
2. Thoracic region;
3. Lumbar spine;
4. The cervical region;
5. Tail section.

Answer: 42315

Task 13
Establish the correct sequence of breathing steps:
1. Blood gas transport;
2. Gas exchange in tissues;
3. Inhale;
4. Exhale;
5. Gas exchange in the lungs.

Answer: 35124

Task 14
Establish the correct sequence of digestive stages:
1. Mechanical processing of food;
2. Absorption of nutrients;
3. Chemical cleavage by enzymes;
4. Formation of fecal masses.

Answer: 1324

Task 15

Establish the correct sequence of stomach sections of ruminants:
1. The book;
2. The scar;
3. Rennet;
4. The grid.

Answer:2143

Open-type assignments

Task 16

The chondrofibrous membrane of the larynx includes five cartilages. One of them has an oval-leaf shape, its base is connected to the body of the thyroid cartilage and covers the entrance to the windpipe during the act of swallowing. What kind of cartilage are we talking about?

Answer: epiglottis cartilage.

Task 17

The liver is brownish-red in color. The left lobe is deeply cut into two lobes – the left lateral and the left medial. The gallbladder is missing. There is a renal indentation on the caudate spine. What kind of animal's liver are we talking about?

Answer: a horse

Task 18

The teeth are of a short-corned type, covered with enamel on the outside. The root is single; the crown is scapular with sharp edges. Which teeth of the domestic bull are we talking about?

Answer: incisors

Task 19

What is the space between the dura and arachnoid membranes of the spinal cord?

Answer: subdural.

Task 20

Parenchymal organ of double secretion. The parenchyma of the exocrine part consists of acinuses, the endocrine part consists of islets of Langenhars. Anatomically, three lobes are poured: the right, middle and left. Which body are we talking about?

Answer: the pancreas.

3.2. Standard tasks for intermediate certification

3.2.1. Questions for the test

The competence achieved:

GPC-1 – Is able to determine the biological status, normal clinical signs of organs and systems of the animal body.

GPC-1 ID-1 To know: safety precautions and personal hygiene rules during the examination of animals, methods of its fixation; schemes of clinical examination of an animal and the procedure for examination individual body systems; methodology for diagnosis of the pathological process.

GPC-1 ID-2 To be able to: collect and analyze anamnesis data, conduct laboratory and functional studies, necessary to determine the animal biological status.

GPC-1 ID-3 To possess practical skills: for conducting on its own a clinical examination of an animal, using classical research methods and digital technologies.

According to the osteology section:

1. What anatomical planes and terms do you know?
2. What is included in the bone segment?
3. The main parts of the vertebra.
4. What details are there on the thorax?
5. What signs are characteristic of a typical cervical vertebra?

6. What signs are characteristic of the thoracic vertebra?
7. What signs are characteristic of the lumbar vertebra?
8. Features of the Atlas and epistropheus.
9. Features of the last cervical and thoracic vertebrae.
10. Features of the sacral part of the trunk skeleton.
11. Features of the tail vertebrae.
12. The number of vertebrae in each department in different animal species.
13. Name the components of the bone tissue of any bone.
14. What is the name of the bone adjacent to the cartilage?
15. What stages in ontogenesis and phylogeny does the bone marrow go through?
16. What stages of development does the skeleton go through?
17. What is characteristic of typical thoracic vertebrae in cattle, horses, pigs and dogs?
18. What is characteristic of the sacrum of cattle, horses, pigs and dogs and how many vertebrae do each species have in it?
19. What is the difference between breast bones in pets?
20. What details does the edge have? What is the peculiarity of the last edge?
21. What is the difference between sternal and asternal edges?
22. Which part of the spinal column is the longest?
23. Which department is the most mobile?
24. What is the shape of the chest of a horse, cattle, pig, dog?
25. Which bones form the entrance and exit from the nasal cavity?
26. Which bones form the bottom of the nasal cavity and the roof of the oral cavity.
27. What bones form the side walls of the nasal cavity?
28. What bones form the bottom of the oral cavity?
29. What holes and channels are there on the bones of the cerebral part of the skull?
30. Which bones form the orbit?
31. Which bones are located in the nasal cavity?
32. Which bones are located in the oral cavity?
33. What holes and channels are there on the bones of the facial part of the skull?
34. What anatomical parts does the latticed bone have?
35. What sinuses (sinuses) are there on the skull? Their species and age characteristics.
36. Features of the structure of the lower jaws in animals.
37. What departments are the limbs divided into?
38. What is the name of the limb department that connects the free limb with the trunk?
39. What bones make up the shoulder and pelvic girdle?
40. How is the shoulder girdle connected to the torso?
41. How does the pelvic girdle connect to the torso?
42. On what basis are the shoulder blades of animals compared?
43. What are the characteristics of the pelvic bones of animals?
44. What links does the free limb divide into?
45. What are the differences between the humerus and the femur?
46. Which bones of the zeigopodium are in the stage of rudimentation?
47. By what signs do you give a comparative anatomical characterization of the forearm bones of animals?
48. On what grounds do you conduct a comparative anatomical characterization of the bones of the lower leg of animals?
49. What are the differences between the metacarpal bone of a horse and that of cattle?
50. How many autopodia rays do different animal species have?

According to the section arthrology:

1. What types of bone connections do you know and how do they differ from each other?
2. List the types of continuous type of bone connections.

3. How do the vertebral bodies, vertebral arches and thoracic bone connect to each other with costal cartilage?

4. Through which ligaments do the spinous processes of the vertebrae connect, what is the name of this ligament on the neck.

5. How do the pelvic bones connect to the spinal column?

6. How do the bones of the skull and pelvis connect in young and adult animals?

7. Name the long ligaments of the spinal column.

8. What are the main components of the joint?

9. What are the additional formations of the joint?

10. How is the joint capsule constructed? What are its cavities filled with?

11.Which joints have an articular lip?

12. Which joints have an articular disc?

13. Which joint has menisci?

14. Which joints are distinguished by the type of structure and the nature of movement in them?

15. Which ligaments are necessarily inherent in a uniaxial joint?

16. Which two groups of ligaments are inherent in a complex joint?

17.Which multi-axis joints do you know? What types of movement are possible in them and what ligaments are present?

18. Which biaxial joints do you know? What bundles are there in them and what types of movement are possible?

19. Which limb joints have more ligaments and what is the reason for this?

20. Name the uniaxial simple and complex joints and ligaments connecting them.

21. What combination joints do you know?

22. Describe the elbow joint in ungulates and dogs.

23. Describe the knee joint in ungulates and dogs.

24. How is the shoulder blade attached to the body in pets?

25. What kind of axial joints do you know?

According to the section myology:

1. What is a muscle as an organ, what is its function and what parts does it consist of?

2. How are muscles divided according to the structure of their abdomen, and what is the meaning of such differences?

3. How can the function performed by a muscle be determined?

4. How to explain the presence of single-, double– and multi-articular muscles?

5. What are subcutaneous muscles, and what differences do they have in different animals?

6. What muscles help to carry the pectoral limb forward?

7. What role does the ventral dentate muscle play?

8. Which muscles of the pectoral limb are involved in standing?

9. What is the mechanism of the pectoral limb that helps the horse to rest standing up?

10. What are the supinators and pronators on the thoracic limb and who has them?

11. What are the differences in the muscles of the pectoral limb acting on the fingers?

12. What muscles ensure the forward movement of the animal?

13. What departments are the muscles of the body divided into?

14. What four groups are the muscles of the trunk divided into?

15. Which dorsal fixation muscles attach the thoracic limb to the trunk and go to the humerus and shoulder blade?

16. Which muscles of ventral fixation attach the thoracic limb to the trunk and go to the shoulder blade and humerus?

17. What is the main muscle holding the trunk between the limbs?

18. Which muscles form the jugular groove and what lies in it?

19. Which two groups are the musculature of the head divided into?
20. Name the dilators going to the nasal and oral openings.
21. Name the jaw closers and openers. Specify on which parts of the lower jaw they are fixed.
22. What muscle strands are the muscles of the spinal column divided into?
23. What are the two groups of dorsal muscle mass?
24. Specify the layered location of the muscles in the dorsal part of the neck.
25. Name the short muscles of the head.
26. Name inspirators and expirators in pairs.
27. Which muscle separates the chest cavity from the abdominal cavity? Its structure and points of attachment.
28. List the abdominal wall muscles, indicating the direction of the muscle fibers. Between which of them is the inguinal canal, its meaning?
29. What are the patterns in the location and action of the muscles of the extremities?
30. Which muscles lie in the shoulder girdle (shoulder blades) and act on a simple multiaxial shoulder joint?
31. Where are the muscles acting on a simple multiaxial shoulder joint located?
32. Which muscles lie in the shoulder area and on which joint do they act?
33. Where are the muscles acting on a simple uniaxial elbow joint located?
34. Which functional muscle groups lie in the forearm area and which joints do they act on?
35. Where are the muscles acting on the complex uniaxial wrist joint and simple uniaxial finger joints?
36. In the area of which joints are the synovial vaginas located? Where are the synovial bursae?
37. Where are the muscles acting on the metatarsal and finger joints?
38. What functional muscle groups are located on the cranio-lateral surface of the shin?
39. What functional muscle groups lie on the caudal surface of the shin?
40. Name the flexors of the metatarsal joint. In which area of the limb do they lie?
41. Name the extensors of the finger joints.
42. List the extensors of the metatarsal joints and where are they located?
43. Specify the flexors of the finger joints and where are they located?
44. Tendons, which muscles form the calcaneal (Achilles) tendon?
45. Name the muscles or their tendons lying in the foot area. Please indicate which joints they act on?
46. Which functional muscle group lies in the croup area and on which joint does it act?
47. List the flexors of the hip joint, in which area and on which surface are they located?
48. Which muscles lie in the hip area and on which joints do they act?
49. What muscles act on the knee joint and in what area are they located?
50. What is the femoral canal? Between which muscles is it located?

According to the section dermatology:

1. Skin structure: epidermis, dermis, subcutaneous layer.
2. Derivatives of the skin: hair, crumb, horns.
3. Derivatives of the skin: hoof, hoof, claw.
4. Glandular skin formations.
5. Sebaceous and sweat glands, structure and specific features.
6. Mammary gland, structure and specific features.
7. General morphological characteristics of the skin.
8. Skin embryogenesis.
9. The structure of the epidermis.
10. The structure of the dermis and hypodermis.

11. The structure and functions of sweat glands.
12. The structure and function of the sebaceous glands.
13. Glandular skin formations.
14. The circulatory and lymphatic systems of the skin.
15. The neuroceptor apparatus of the skin.
16. Anatomical and physiological features of the skin in newborn animals.
17. Derivatives of the skin: hair.
18. Derivatives of the skin: crumb.
19. Derivatives of the skin: hoof, hoof.
20. Derivatives of the skin: horns, claw.
21. Mammary gland, structure and specific features.
22. Mammary gland of a female domestic bull.
23. Mammary gland of a female mare.
24. Mammary gland of a female pig.
25. The mammary gland of a female bitch.
26. Skin aging. Anatomical and physiological features of the skin in aged animals.
27. Derivatives of the skin of a domestic bull.
28. Derivatives of the horse's skin.
29. Derivatives of pig skin.
30. Derivatives of the skin of a dog.
31. The skin is like a receptor apparatus.
32. Skin functions

3.2.2. Exam questions

The competence achieved:

GPC-1 – Is able to determine the biological status, normal clinical signs of organs and systems of the animal body.

GPC-1 ID-1 To know: safety precautions and personal hygiene rules during the examination of animals, methods of its fixation; schemes of clinical examination of an animal and the procedure for examination individual body systems; methodology for diagnosis of the pathological process.

GPC-1 ID-2 To be able to: collect and analyze anamnesis data, conduct laboratory and functional studies, necessary to determine the animal biological status.

GPC-1 ID-3 To possess practical skills: for conducting on its own a clinical examination of an animal, using classical research methods and digital technologies.1. Requirements of regulatory and technical documentation for honey.

For the 1st year.

Section: Osteology, Myology, Arthrology, Dermatology

1. A brief history of the Department of Animal Anatomy of the Federal State Budgetary Educational Institution of Higher Education. International Veterinary Anatomical Nomenclature.
2. Bone as an organ. Classification of bones.
3. Features of the structure of the vertebral column of a domestic bull.
4. The skeleton of the thoracic limb of a domestic bull (shoulder blade, humerus, forearm bones).
5. The skeleton of the brush of a domestic bull.
6. Features of the structure of the skeleton of the hand in the studied animals (horse, pig, dog).
7. The skeleton of the pelvic limb of a domestic bull (pelvis, femur).
8. The skeleton of the pelvic limb of a domestic bull (shin, flattened, metatarsal and fingers).

9. The skeleton of the foot of a domestic bull.
10. Bones of the facial skull (upper and lower jaw).
11. Bones of the facial skull (lacrimal, palatine, sublingual, incisor, zygomatic bones).
12. Bones of the cerebral skull, types of bone connections. Occipital and sphenoid bones.
13. Bones of the cerebral skull. Temporal, latticed and frontal bones.
14. The connection of the bones of the head, the connection of the ribs with the vertebrae and with the chest bone.
15. The joints of the bones of the axial skeleton (the connection of the bones of the head, the connection of the vertebrae with the skull and among themselves).
16. Temporomandibular joint.
17. Shoulder, elbow and wrist joints of a domestic bull.
18. The shoulder joint of a domestic bull (bones, ligaments, muscles, blood vessels).
19. The elbow joint of a domestic bull (bones, ligaments, muscles, blood vessels).
20. Joints and ligaments of the hand of a domestic bull.
21. Joints of the bones of the pelvic limb (hip and knee joints).
22. Joints and ligaments of the foot.
23. Muscle as an organ, classification of muscles by function.
24. Additional and auxiliary organs of muscles.
25. Muscles of the shoulder girdle of a domestic bull.
26. Muscles of the shoulder and elbow joints of a domestic bull.
27. Muscles of the metatarsal joint and finger joints of a domestic bull.
28. Muscles of the chest wall of a domestic bull, diaphragm.
29. Muscles of the abdominal wall of a domestic bull.
30. Facial muscles of a domestic bull.
31. Chewing muscles of a domestic bull,
32. Muscles of the hip joint.
33. Mammary gland of animals.
34. The structure of hooves and hooves of animals.
35. The structure of the claw, crumb, hair, horn.
36. The structure of the skin, sweat and sebaceous glands.

Section: Splanchnology, Angiology

1. Basic rules of sanitation and hygiene when working with cadaverous material. Tools for dissection.
2. The general principle of the structure of parenchymal and tubular organs.
3. Thoracic, abdominal and pelvic cavities, serous membranes, retroperitoneal spaces.
4. Division of the abdominal cavity into regions. Topography of organs in the epigastric region of a dog.
5. Division of the abdominal cavity into regions. Topography of organs in the mesogastric region of the horse.
6. Division of the abdominal cavity into regions. Topography of organs in the hypogastric region of a domestic bull.
7. The oral cavity of a domestic bull (cheeks, hard palate, soft palate, salivary glands).
8. The oral cavity of a domestic bull (lips, gums, teeth).
9. The bottom of the mouth, the tongue.
10. Esophagus, pharynx of animals.
11. Single-chamber stomach, structural features, classification.
12. Multicameral stomach.
13. The general outline of the structure of the small intestine. The small intestine of a domestic bull.
14. Small and large intestine. The general plan of the building.
15. The general outline of the structure of the colon. The colon of a domestic bull.

16. The horse's colon.
17. Rectum and anal canal. Specific features.
18. Liver of a domestic bull.
19. The liver as a parenchymal organ. Features of the macrostructure of the horse liver.
20. The liver as a parenchymal organ. Features of the macrostructure of the dog's liver.
21. Pancreas, structure, specific features.
22. Nose, nasal cavity. Specific features.
23. Trachea, lungs, structure, specific features.
24. Larynx. Structure, specific features.
25. Paranasal sinuses, bronchial tree of animals. Specific features.
26. Animal lungs. Specific features.
27. The structural and functional unit of the kidney. Features of blood supply to the kidney.
28. Kidneys, classification, structure, specific features.
29. Ureters, bladder, urethra, structure and specific features.
30. Ovary, fallopian tube. Structure, specific features.
31. Vagina, vestibule of the vagina, vulva. Structure, specific features.
32. Uterus, types of uterus, structure, specific features.
33. Testis, an appendage of the testis. Structure, specific features.
34. The vas deferens, the spermatic cord, the accessory sex glands. Structure, specific features.
35. Testicular sac, genitourinary canal. Structure, specific features.
36. Penis, prepuce. Structure, specific features.
37. Angiology. The composition and functions of the cardiovascular system. Liquid tissues of the body.
38. Basic anatomical methods of studying the cardiovascular system. Museum of the Department of Animal Anatomy of the Federal State Budgetary Educational Institution of Higher Education.
39. Regularities of the course and branching of vessels.
40. The structure of the wall of blood vessels. Arteries, veins, lymphatic vessels. Hemomicrocirculatory bed.
41. Blood vessels.
42. Blood circulation in adult animals. Vessels and nerves of the heart.
43. Fetal blood circulation. Changes in the cardiovascular system after birth.
44. Pericardium, vessels and nerves of the heart.
45. Macroscopic structure of the heart. Specific features.
46. The heart. The structure of the heart wall, the fibrous skeleton of the heart.
47. Features of the structure of the chambers of the heart.
48. The conduction system of the heart.
49. Features of branching of the common carotid arteries in a domestic bull. The course and branching of the occipital and large auricular arteries.
50. Features of branching of the superficial temporal artery and lingual-facial trunk in a domestic bull.
51. Features of the course and branching of the maxillary artery in a domestic bull.
52. Branches of the thoracic aorta of a domestic bull.
53. Features of branching of the aortic arch and the brachiocephalic trunk in a domestic bull.
54. Features of the course and branching of the main arterial highways in the area of the shoulder blade and shoulder in a domestic bull.
55. Arteries of the pelvic cavity of a domestic bull. The middle sacral artery.
56. Arteries of the pelvic cavity of a domestic bull. The internal iliac artery.
57. Arteries of the pelvic limb of a domestic bull.

58. Features of the course and branching of the external iliac and femoral arteries in a domestic bull.

59. Visceral branches of the abdominal aorta of a domestic bull.

60. Parietal branches of the abdominal aorta.

61. Portal vein of the liver of a domestic bull.

62. Veins of the head of a domestic bull.

63. Veins of the thoracic limb of a domestic bull.

64. Veins of the pelvic limb of a domestic bull.

For the 2nd year.

1. The structure and classification of the joints of the thoracic limb.
2. Horse colon (structure, topography, vascularization, innervation).
3. Rhomboid brain (structure, vascularization).
4. Division of the abdominal cavity into regions. The serous membranes of the thoracic and abdominal cavities.
5. Organs of the oral cavity (structure, species, vascularization, innervation).
6. The big brain (structure, vascularization).
7. Joints of bones of the axial and peripheral skeletons.
8. Small intestine (structure, topography, vascularization, innervation).
9. Spinal cord (structure, membranes, vessels).
10. Bone as an organ. Classification of bones.
11. Hard and soft palate (structure, vascularization, innervation).
12. The membranes and vessels of the brain.
13. Structural elements of the body.
14. Wall-mounted digestive glands (structure, topography, vascularization, innervation).
15. The structure of the heart and pericardium (structure, vascularization, innervation).
16. The cardiovascular system (composition, patterns of structure, course and branching of blood vessels).
17. Shoulder area (bones, ligaments, muscles, mucous membranes, vessels, nerves).
18. Single-chamber stomach (structure, topography, vascularization, innervation).
19. Topography of organs in the epigastric region.
20. Liver and pancreas (structure, species, topography, vascularization, innervation),
21. The structure of the statoacoustic analyzer.
22. Skin and its derivatives (mammary gland, hoof, hoof, hair).
23. Regularities of the course and branching of vessels. Hemomicrocirculatory bed (links and their structure).
24. The large intestine of cattle (structure, topography, vascularization, innervation).
25. Carpal joint (bones, ligaments, muscles, synovial bursae, synovial vaginas, vessels, nerves).
26. Pharynx (structure, vascularization, innervation).
27. Topography of the abdominal organs of the dog.
28. Muscle as an organ. Classification of muscles.
29. Multicameral stomach (structure, vascularization, innervation).
30. Features of fetal and adult animal blood circulation.
31. Structure and classification of joints of the pelvic limb.
32. Oral cavity (teeth, tongue, hard and soft palate - specific features) structures, vascularization, innervation).
33. The heart (wall, vessels, nerves, conducting system).
34. Patterns of the structure of internal organs. Methods of anatomical examination of the vascular system.
35. Neck area (bones, ligaments, muscles, synovial bursae, vessels, nerves).

36. Liver of domestic animals (specific features of the structure, topography, excretory ducts).

37. Croup area (bones, ligaments, muscles, synovial bursae, vessels, nerves).

38. Lungs (structure, species features, vascularization, innervation)

39. Parasympathetic division of the autonomic nervous system.

40. Organs of urination (structure, species, vascularization, innervation),

41. Topography of the abdominal organs of a pig.

42. The shin area (bones, ligaments, muscles, synovial bursae, synovial vaginas, vessels, nerves).

43. Tongue, teeth (structure, species features, vascularization, innervation).

44. The structure of the bones of the cerebral skull.

45. The area is flattened (bones, ligaments, muscles, synovial sheaths, vessels, nerves).

46. Female reproductive organs (species characteristics, vascularization, innervation).

47. Trigeminal and facial nerves.

48. General principles of the structure of the nervous system.

49. Nasal cavity (structure, paranasal sinuses, vascularization, innervation).

50. Portal vein - features of its formation in domestic animals.

51. Auxiliary organs of muscles (structure and topography).

52. The area of the cerebral skull (bones, ligaments, muscles, vessels, nerves).

53. Throat of domestic animals (structure, blood supply, innervation).

54. Joints of the thoracic and pelvic extremities (structure, synovial bursae and synovial vaginas).

55. Single-chamber stomach (structure, topography, vascularization, innervation).

56. Cranial nerves.

57. Anatomy of the lymphatic system (vessels and nodes).

58. Joints, ligaments, mucous bursae and synovial vaginas of the thoracic limb.

59. Cervical and thoracic spinal nerves.

60. Neck (bones, ligaments, muscles, synovial bursae, vessels, nerves).

61. Brachial and lumbosacral plexus of spinal nerves.

62. Topography of the abdominal organs of the horse.

63. Hip joint (bones, ligaments, muscles, synovial bursae, vessels, nerves)

64. Topography of organs in the mesagastric region.

65. Auxiliary organs of muscles (structure, topography, specific features).

66. Knee joint (bones, ligaments, muscles, synovial bursae, vessels, nerves).

67. Pig colon (structure, topography, vascularization, innervation).

68. Cranial nerves (vagus nerve).

69. Features of fetal blood circulation. Changes in the structure of the heart during the newborn period.

70. The metatarsal joint (bones, ligaments, muscles, synovial sheaths, vessels, nerves)

71. Kidneys (structure, species features, vascularization, innervation).

72. The hand (bones, joints, ligaments, muscles, synovial bursae and synovial vaginas).

73. Female reproductive organs (structure, species characteristics, vascularization, innervation).

74. Heart (structure, vascularization, innervation). Circulatory circles.

75. The cerebral skull (bones, joints of bones, muscles, vessels, nerves)

76. Muscles of the thoracic limb (topography, function, vascularization, innervation)

77. Liver of domestic animals (specific structural features, vascularization, innervation).

78. Joints of bones of the peripheral skeleton. The structure of joints, their classification.

79. Facial skull (bones, bone junction, muscles, vessels, nerves).

80. Male reproductive organs (structure, species characteristics, vascularization, innervation).

81. Joints of the bones of the axial skeleton,

82. Knee joint (bones, ligaments, muscles, synovial bursae, vessels, nerves).
83. Pharynx, larynx (structure, species features, vascularization, innervation).
84. The area of the forearm (bones, ligaments, muscles, synovial bursae, vessels, nerves).
85. Female reproductive organs (species features, topography, vascularization, innervation).
86. The composition and structure of the links of the lymphatic system. Topography of the lymph nodes of the head and neck.
87. The wrist area (bones, ligaments, muscles, synovial sheaths, vessels, nerves).
88. Organs of urination of domestic animals (specific features of the structure, topography, vascularization, innervation).
89. Visual analyzer (eyeball, lacrimal apparatus).
90. The finger of the thoracic limb (bones, ligaments, muscles, synovial bursae, synovial vaginas, vessels, nerves).
91. Male accessory sex glands, genitourinary canal, penis, prepuce (structure, vascularization, innervation).
92. Topography of the abdominal organs of a cow.
93. The heart of domestic animals (structure, topography, vascularization, innervation).
94. Uterus of domestic animals (types of uterus, specific structural features, vascularization, innervation).
95. Statoacoustic analyzer.
96. Foot (specific features of bones, ligaments, synovial bursae, synovial vaginas).
97. Lungs of domestic animals (structure, species features, vascularization, innervation).
98. The structure of the lymphatic system. The main lymphatic vessels.
99. Multicameral stomach (structure, topography, vascularization, innervation).
100. Features of the structure of the skeleton of poultry.
101. Sympathetic division of the autonomic nervous system.
102. Withers (bones, ligaments, muscles, mucous membranes, vessels, nerves).
103. Features of the structure of the respiratory organs of domestic animals.
104. Fetal blood circulation. Anatomical changes of the heart during the newborn period.
105. The area of the shoulder girdle of domestic animals (bones, ligaments, muscles, mucous membranes, vessels, nerves).
106. Organs of urination (structure, species features, topography, vascularization, innervation).
107. Membranes and blood vessels of the brain and spinal cord.
108. Lymphatic nodes of the head and neck. The main lymphatic vessels.
109. Lymph nodes of the thoracic limb and thoracic cavity. The main lymphatic vessels.
110. Lymph nodes of the thoracic limb and thoracic cavity. The main lymphatic vessels.
111. Lymph nodes and lymphatic vessels of the abdominal organs. The main lymphatic vessels.
112. Lymph node: structure, specific features. The main lymphatic vessels.

4. METHODOLOGICAL MATERIALS DEFINING THE PROCEDURES FOR ASSESSING KNOWLEDGE, SKILLS AND ABILITIES AND WORK EXPERIENCE CHARACTERIZING THE STAGES OF COMPETENCE FORMATION

4.1. Criteria for evaluating students' knowledge during the knowledge survey (written survey)

Mark **"excellent"** - the student clearly expresses his point of view on the issues under consideration, giving appropriate examples.

Mark "**good**" - the student admits some errors in the answer

The mark «**satisfactory**" - the student discovers gaps in knowledge of the basic educational and normative material.

The mark "**unsatisfactory**" - the student discovers significant gaps in knowledge of the basic provisions of the discipline, the inability to obtain the correct solution to a specific practical problem with the help of a teacher.

4.2. Criteria for evaluating students' knowledge during testing

The test result is evaluated on a percentage rating scale. Each student is offered a set of test tasks of 25 questions:

The mark "**excellent**" is 25-22 correct answers.

The mark "**good**" is 21-18 correct answers.

The mark "**satisfactory**" is 17-13 correct answers.

The mark "**unsatisfactory**" is less than 13 correct answers

4.3. Criteria for evaluating students' knowledge in the preparation of reports

The mark "**excellent**" - the problem is identified and its relevance is justified; an analysis of various points of view on the problem under consideration is made and one's own position is logically stated; conclusions are formulated, the topic is fully disclosed, the volume is maintained; the requirements for external design are met, the basic requirements for the report are fulfilled.

The mark "**good**" - mistakes have been made. In particular, there are inaccuracies in the presentation of the material; there is no logical consistency in judgments; the volume of the report is not maintained; there are omissions in the design, there are significant deviations from the requirements for the presentation of materials.

The mark "**satisfactory**" - the topic is only partially covered; factual errors were made in the content of the report; there are no conclusions, the topic of the report is not disclosed.

The mark "**unsatisfactory**" - there is a significant misunderstanding of the problem or the report is not submitted.

1.4. Criteria for evaluating students' knowledge when checking control papers

1.5.

The mark "**excellent**" - the problem is identified and its relevance is justified; an analysis of various points of view on the problem under consideration is made and one's own position is logically stated; conclusions are formulated, the topic is fully disclosed, the volume is maintained; the requirements for external design are met, the basic requirements for the abstract are fulfilled

The mark is "**good**" - mistakes have been made. In particular, there are inaccuracies in the presentation of the material; there is no logical consistency in judgments; the volume of the abstract is not maintained; there are omissions in the design, there are significant deviations from the requirements for abstracting.

The mark "**satisfactory**" - the topic is only partially covered; factual errors were made in the content of the abstract; there are no conclusions, the topic of the abstract is not disclosed

The mark "**unsatisfactory**" - there is a significant misunderstanding of the problem or the abstract is not presented at all.

4.5. Criteria of knowledge during the test

The mark "**accepted** " must correspond to the parameters of any of the positive ratings ("excellent", "good", "satisfactory").

The mark "**not accepted** " rating should correspond to the parameters of the "unsatisfactory" rating.

The mark "excellent" – all types of educational work provided for in the curriculum have been completed. The student demonstrates the compliance of knowledge, skills, and abilities with the indicators given in the tables, operates with acquired knowledge, skills, and applies them in situations of increased complexity. At the same time, inaccuracies, difficulties in analytical operations, transfer of knowledge and skills to new, non-standard situations may be allowed.

The mark "good" – all types of educational work provided for in the curriculum have been completed. The student demonstrates the compliance of knowledge, skills, and abilities with the indicators given in the tables, operates with acquired knowledge, skills, and applies them in standard situations. At the same time, minor errors, inaccuracies, difficulties in analytical operations, transfer of knowledge and skills to new, non-standard situations may be made.

Mark "satisfactory" – one or more types of educational work provided for in the curriculum have not been completed. The student demonstrates incomplete compliance of knowledge, skills, and abilities with the indicators given in the tables, significant errors are made, a partial lack of knowledge, skills, and skills is manifested in a number of indicators, the student experiences significant difficulties in operating with knowledge and skills when transferring them to new situations. –

The mark «unsatisfactory" – the types of educational work provided for in the curriculum have not been completed. demonstrates incomplete compliance of knowledge, skills, and abilities given in the tables of indicators, significant errors are made, a lack of knowledge, skills, and skills is manifested for a large number of indicators, the student experiences significant difficulties in operating knowledge and skills when transferring them to new situations

4.6. Criteria of knowledge during the examination

The mark "excellent" – all types of educational work provided for in the curriculum have been completed. The student demonstrates the compliance of knowledge, skills, and abilities with the indicators given in the tables, operates with acquired knowledge, skills, and applies them in various situations of increased complexity. At the same time, inaccuracies, difficulties in analytical operations, transfer of knowledge and skills to new, non-standard situations may be allowed. –

The mark "good" – all types of educational work provided for in the curriculum have been completed. The student demonstrates the compliance of knowledge, skills, and abilities with the indicators given in the tables, operates with acquired knowledge, skills, and applies them in standard situations. At the same time, minor errors, inaccuracies, difficulties in analytical operations, transfer of knowledge and skills to new, non-standard situations can be made.

Mark "satisfactory" – one or more types of educational work provided for in the curriculum have not been completed. The student demonstrates incomplete compliance of knowledge, skills, and abilities with the indicators given in the tables, significant errors are made, a partial lack of knowledge, skills, and skills are manifested in a number of indicators, the student experiences significant difficulties in operating with knowledge and skills when transferring them to new situations.

The mark "unsatisfactory" – the types of educational work provided for in the curriculum have not been completed. demonstrate incomplete compliance of knowledge, skills, and abilities given in the tables of indicators, significant errors are made, a lack of knowledge, skills, and skills are manifested for a large number of indicators, the student experiences significant difficulties in operating with knowledge and skills when transferring them to new situations.

Program abstract of the discipline B1.O.07
"Animal Anatomy"
specialty 36.05.01 Veterinary Medicine
Profile: «General clinical veterinary medicine»

The purpose of mastering the discipline: disciplines in the training of veterinarians is to give students fundamental morphological knowledge about a functioning, developing and adapting organism.

Position of the discipline in the curriculum: Discipline B1.O.07 "Animal Anatomy" refers to the mandatory part of the disciplines of the federal state educational standard of higher education in the specialty 36.05.01 "Veterinary Medicine" (specialty level), is mastered in full-time education in the 1th, 2th and 3th semesters.

Requirements for the results of mastering the discipline:

The study of the discipline should form the following competencies: GPC-1.

Summary of the discipline:

Osteology, Arthrology, Myology, Dermatologists;

Splanchnology, Angiology, Endocrine glands;

Nervous system, Sensory organs, Poultry;

As a result of mastering the discipline, the student must:

General professional competencies (GPC):

- GPC-1. Is able to determine the biological status, normal clinical signs of organs and systems of the animal body.

GPC-1 ID-1 - To know: safety precautions and personal hygiene rules during the examination of animals, methods of its fixation; schemes of clinical examination of an animal and the procedure for examination individual body systems; methodology for diagnosis of the pathological process.

GPC-1 ID-2 - To be able to: collect and analyze anamnesis data, conduct laboratory and functional studies, necessary to determine the animal biological status.

GPC-1 ID-3 – To possess practical skills: for conducting on its own a clinical examination of an animal, using classical research methods and digital technologies.

The complexity of the discipline is: 432 academic hours (12 credits).

Final control of the discipline: test, exam.