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.
May 6, 2024

Department of feeding and breeding animals

EDUCATIONAL WORK PROGRAM

for the discipline

" BREEDING AND THE BASICS OF PRIVATE ANIMAL HUSBANDRY"

The level of higher education
SPECIALIST COURSE

Specialty 36.05.01 Veterinary Medicine
Full-time education
Education starts in 2024

Reviewed and adopted
at the meeting of the department
on May 2, 2024.
Protocol No. 9

Head of the Department
of Veterinary and Sanitary Expertise,
Candidate of Veterinary Medicine, Associate Professor
_____ Suyazova I.V.

Saint Petersburg
2024

1. AIMS AND OBJECTIVES OF THE DISCIPLINE "BREEDING AND THE BASICS OF PRIVATE ANIMAL HUSBANDRY"

1. The main goal of teaching the discipline is a comprehensive knowledge of the biological characteristics of animals, indicators of their breeding and productive qualities, and modern production technologies.
2. The main objectives of the discipline are to teach future specialists the basic methods of assessing the quality of livestock and poultry products.

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 05.36.01 "Veterinary Medicine".

The field of professional activity:
13 Agriculture

Types of professional activity tasks:
• Medical;
• Expert control;

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

a) Professional competencies (PC):

PC-18. Is able to carry out veterinary and sanitary expertise, manage the production and certification of livestock products, beekeeping, aquatic fisheries and feed, as well as transport rules of animals and goods during export and import operations to ensure food safety, carry out a sanitary assessment of livestock facilities and structures.
PC-18 ID-1
To be able to carry out veterinary and sanitary pre-slaughter inspection of animals and poultry, post-slaughter veterinary and sanitary examination of carcasses and organs; correctly assess the quality and control of agricultural output; assess the condition of controlled products according to organoleptic properties and laboratory results using digital technologies, control the operating parameters of all links in the processing of livestock raw materials; organize and control transportation of slaughtered animals, raw materials, products of animal and vegetable origin; to determine the species of animal meat; to carry out bacteriological analysis of meat and its products; to use methods of technochemical control of canned products of animal and vegetable origin
PC-18 ID-2
To know the government standards in the field of veterinary and sanitary expertise and control of the production of safe livestock products, keeping, aquatic fisheries and feed, as well as plant products; rules for veterinary and sanitary examination and quality control of food of animal origin; preventive measures of zoonoses; modern means and methods of disinfection, disinsection and deratization of slaughterhouses and meat processing enterprises; norms and rules for the organization and control of transportation of animals, raw materials, products of animal origin, bee products and aquatic fisheries; biology and life cycles of animals that cause zoonoses, as well as factors of its infection; basic concepts and terms in the field of controling

the quality of animal slaughter products, its chemical composition, nutritional value, quality factors.

b) General professional competencies:

GPC-2. Is able to interpret and evaluate in professional activity the influence of natural, socio-economic, genetic and economic factors on the physiological status of the animal body.

GPC-2 ID-1

To know: ecology factors of the environment, its classification and the nature of relationships with living organisms; basic ecological concepts; interspecific relations of animals and plants, terms and bio ecology laws, parasites and hosts; ecological features of some types of pathogenic microorganisms; mechanisms of influence of anthropogenic and economic factors on the animal body.

GPC-2 ID-2

To be able to: use environmental factors and environmental laws in agricultural manufacture; apply the achievements of modern microbiology and ecology of microorganisms in animal husbandry and veterinary medicine in order to prevent infectious and invasive diseases and treat animals; use environmental monitoring methods in the environmental assessment of agricultural facilities and the production of agricultural products; assess the impact on the animal body, anthropogenic and economic factors

GPC-2 ID-3

To possess skills of: the knowledge of the origin of living organisms, the levels of organization of living matter, favorable and unfavorable factors affecting the body; the basis for studying environmental knowledge of the environment, the laws of the development of nature and society; skills of observation, comparative analysis, historical and experimental modeling of the impact of anthropogenic and economic factors on living objects, with the use of digital technologies as well.

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

Discipline B1.O.17 "Breeding and the basics of private animal husbandry" is a discipline in Block 1 of the mandatory part of the federal state educational standard of higher education in specialty 36.05.01 "Veterinary Medicine" (specialty level).

It is mastered in the 3rd semester of full-time education.

The student's initial (initial) knowledge, skills, general cultural and professional competencies necessary for studying the discipline are obtained by studying courses in mathematics, biophysics, organic and biological chemistry, anatomy, animal physiology, histology, veterinary genetics, cytology and embryology, zoology and ecology animals.

The discipline "Breeding and fundamentals of animal science" is fundamental for the study of the following disciplines: feeding, obstetrics and gynecology, animal hygiene. Knowledge of breeding farm animals with the basics of private animal science is important when studying clinical diagnostics, pathological physiology, pathological anatomy, veterinary and sanitary examination.

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	
		3	3
Classroom classes (total)	**50**	**50**	**50**
Including:	-	-	-

Lectures, including interactive forms	**32**	16	16
Practical (PP), including interactive forms, among which are:	68	34	34
practical training (PT)	12	6	6
Self-study	**116**	**58**	**58**
Control	**36**	**0**	**36**
Summary	+	+	+
Type of intermediate and final certification (credit, exam)	Credit with grade	Credit with grade	Credit with grade
Total labor intensity hours/credits	**216/6**	**108/3**	**108/3**

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.	Patterns of growth and development of animals.	GPC-2 Able to interpret and evaluate in professional activities the influence of natural, socio-economic, genetic and economic factors on the physiological state of an animal's body GPC-2 ID-1 Know environmental factors, their classification and the nature of relationships with living organisms; basic ecological concepts, terms and laws of bioecology; interspecific relationships between animals and plants, predator and prey, parasites and hosts; environmental features of certain types of pathogenic microorganisms; mechanisms of influence of anthropogenic and economic factors on the animal body GPC-2 ID-2 Be able to use environmental factors and environmental laws in agricultural production; apply the achievements of modern microbiology and ecology of microorganisms in animal husbandry and veterinary medicine in order to prevent infectious and invasive diseases and treat animals; use environmental monitoring methods during environmental assessment of agro-industrial complex objects and production of agricultural products, including using digital technologies; assess the impact of anthropogenic and economic factors on the animal body GPC-2 ID-3 Possess an understanding of the emergence of living organisms, levels of organization of living matter, favorable and unfavorable factors affecting the body; the basis for the study of ecological knowledge of the surrounding world, the laws of development of nature and society; skills of observation, comparative analysis, historical and experimental modeling of the impact of anthropogenic and economic factors on living objects, including using digital technologies	3	1		2	6
2.	Methods of breeding farm animals.	GPC-2 Able to interpret and evaluate in professional activities the influence of natural, socio-economic, genetic and economic factors on the physiological state of an animal's body GPC-2 ID-1 Know environmental factors, their classification and the nature of relationships with living organisms; basic ecological concepts, terms and laws of bioecology; interspecific relationships between animals and plants, predator and prey, parasites and hosts; environmental features of certain types of pathogenic microorganisms; mechanisms of influence of anthropogenic and economic factors on the animal body GPC-2 ID-2 Be able to use environmental factors and environmental laws in agricultural production; apply the achievements of modern microbiology and ecology of microorganisms in animal husbandry and veterinary medicine in order to prevent infectious and invasive diseases and treat animals; use environmental monitoring methods during environmental assessment of agro-industrial complex objects and production of agricultural products, including using digital technologies; assess the impact of anthropogenic and economic factors on the animal body	3	2	4		4

		GPC -2 ID-3 Possess an understanding of the emergence of living organisms, levels of organization of living matter, favorable and unfavorable factors affecting the body; the basis for the study of ecological knowledge of the surrounding world, the laws of development of nature and society; skills of observation, comparative analysis, historical and experimental modeling of the impact of anthropogenic and economic factors on living objects, including using digital technologies					
3.	Selection and selection in livestock farming	GPC -2 Able to interpret and evaluate in professional activities the influence of natural, socio-economic, genetic and economic factors on the physiological state of an animal's body GPC -2 ID-1 Know environmental factors, their classification and the nature of relationships with living organisms; basic ecological concepts, terms and laws of bioecology; interspecific relationships between animals and plants, predator and prey, parasites and hosts; environmental features of certain types of pathogenic microorganisms; mechanisms of influence of anthropogenic and economic factors on the animal body GPC -2 ID-2 Be able to use environmental factors and environmental laws in agricultural production; apply the achievements of modern microbiology and ecology of microorganisms in animal husbandry and veterinary medicine in order to prevent infectious and invasive diseases and treat animals; use environmental monitoring methods during environmental assessment of agro-industrial complex objects and production of agricultural products, including using digital technologies; assess the impact of anthropogenic and economic factors on the animal body GPC -2 ID-3 Possess an understanding of the emergence of living organisms, levels of organization of living matter, favorable and unfavorable factors affecting the body; the basis for the study of ecological knowledge of the surrounding world, the laws of development of nature and society; skills of observation, comparative analysis, historical and experimental modeling of the impact of anthropogenic and economic factors on living objects, including using digital technologies	3	2			4
4.	Cattle breeding is the leading industry in the production of dairy products in Russia. Biological and productive qualities of cattle and methods for their assessment.	GPC -2 Able to interpret and evaluate in professional activities the influence of natural, socio-economic, genetic and economic factors on the physiological state of an animal's body GPC -2 ID-1 Know environmental factors, their classification and the nature of relationships with living organisms; basic ecological concepts, terms and laws of bioecology; interspecific relationships between animals and plants, predator and prey, parasites and hosts; environmental features of certain types of pathogenic microorganisms; mechanisms of influence of anthropogenic and economic factors on the animal body GPC -2 ID-2 Be able to use environmental factors and environmental laws in agricultural production; apply the achievements of modern microbiology and ecology of microorganisms in animal husbandry and veterinary medicine in order to prevent infectious and invasive diseases and treat animals; use environmental monitoring methods during environmental assessment of agro-industrial complex objects and production of agricultural products, including using digital technologies; assess the impact of anthropogenic and economic factors on the animal body GPC -2 ID-3 Possess an understanding of the emergence of living organisms, levels of organization of living matter, favorable and unfavorable factors affecting the body; the basis for the study of ecological knowledge of the surrounding world, the laws of development of nature and	3	2	6	2	6

		society; skills of observation, comparative analysis, historical and experimental modeling of the impact of anthropogenic and economic factors on living objects, including using digital technologies					
5.	Comparative assessment of the main planned breeds of cattle in Russia.	GPC -2 Able to interpret and evaluate in professional activities the influence of natural, socio-economic, genetic and economic factors on the physiological state of an animal's body GPC -2 ID-1 Know environmental factors, their classification and the nature of relationships with living organisms; basic ecological concepts, terms and laws of bioecology; interspecific relationships between animals and plants, predator and prey, parasites and hosts; environmental features of certain types of pathogenic microorganisms; mechanisms of influence of anthropogenic and economic factors on the animal body GPC -2 ID-2 Be able to use environmental factors and environmental laws in agricultural production; apply the achievements of modern microbiology and ecology of microorganisms in animal husbandry and veterinary medicine in order to prevent infectious and invasive diseases and treat animals; use environmental monitoring methods during environmental assessment of agro-industrial complex objects and production of agricultural products, including using digital technologies; assess the impact of anthropogenic and economic factors on the animal body GPC -2 ID-3 Possess an understanding of the emergence of living organisms, levels of organization of living matter, favorable and unfavorable factors affecting the body; the basis for the study of ecological knowledge of the surrounding world, the laws of development of nature and society; skills of observation, comparative analysis, historical and experimental modeling of the impact of anthropogenic and economic factors on living objects, including using digital technologies	3	1			4
6.	Pig farming in Russia. Livestock numbers and production volumes. Biological and productive qualities of pigs, methods for their assessment.	GPC -2 Able to interpret and evaluate in professional activities the influence of natural, socio-economic, genetic and economic factors on the physiological state of an animal's body GPC -2 ID-1 Know environmental factors, their classification and the nature of relationships with living organisms; basic ecological concepts, terms and laws of bioecology; interspecific relationships between animals and plants, predator and prey, parasites and hosts; environmental features of certain types of pathogenic microorganisms; mechanisms of influence of anthropogenic and economic factors on the animal body GPC -2 ID-2 Be able to use environmental factors and environmental laws in agricultural production; apply the achievements of modern microbiology and ecology of microorganisms in animal husbandry and veterinary medicine in order to prevent infectious and invasive diseases and treat animals; use environmental monitoring methods during environmental assessment of agro-industrial complex objects and production of agricultural products, including using digital technologies; assess the impact of anthropogenic and economic factors on the animal body GPC -2 ID-3 Possess an understanding of the emergence of living organisms, levels of organization of living matter, favorable and unfavorable factors affecting the body; the basis for the study of ecological knowledge of the surrounding world, the laws of development of nature and society; skills of observation, comparative analysis, historical and experimental modeling of the impact of anthropogenic and economic factors on living objects, including using digital technologies	3	2	4	2	4
7.	Comparative assessment	GPC -2 Able to interpret and evaluate in professional activities the influence of natural, socio-	3	1			4

	of the main planned breeds of pigs in Russia.	economic, genetic and economic factors on the physiological state of an animal's body GPC -2 ID-1 Know environmental environmental factors, their classification and the nature of relationships with living organisms; basic ecological concepts, terms and laws of bioecology; interspecific relationships between animals and plants, predator and prey, parasites and hosts; environmental features of certain types of pathogenic microorganisms; mechanisms of influence of anthropogenic and economic factors on the animal body GPC -2 ID-2 Be able to use environmental environmental factors and environmental laws in agricultural production; apply the achievements of modern microbiology and ecology of microorganisms in animal husbandry and veterinary medicine in order to prevent infectious and invasive diseases and treat animals; use environmental monitoring methods during environmental assessment of agro-industrial complex objects and production of agricultural products, including using digital technologies; assess the impact of anthropogenic and economic factors on the animal body GPC -2 ID-3 Possess an understanding of the emergence of living organisms, levels of organization of living matter, favorable and unfavorable factors affecting the body; the basis for the study of ecological knowledge of the surrounding world, the laws of development of nature and society; skills of observation, comparative analysis, historical and experimental modeling of the impact of anthropogenic and economic factors on living objects, including using digital technologies					
8.	Poultry farming in Russia. Current state and development prospects. Biological characteristics of farm poultry.	GPC -2 Able to interpret and evaluate in professional activities the influence of natural, socio-economic, genetic and economic factors on the physiological state of an animal's body GPC -2 ID-1 Know environmental factors, their classification and the nature of relationships with living organisms; basic ecological concepts, terms and laws of bioecology; interspecific relationships between animals and plants, predator and prey, parasites and hosts; environmental features of certain types of pathogenic microorganisms; mechanisms of influence of anthropogenic and economic factors on the animal body GPC -2 ID-2 Be able to use environmental factors and environmental laws in agricultural production; apply the achievements of modern microbiology and ecology of microorganisms in animal husbandry and veterinary medicine in order to prevent infectious and invasive diseases and treat animals; use environmental monitoring methods during environmental assessment of agro-industrial complex objects and production of agricultural products, including using digital technologies; assess the impact of anthropogenic and economic factors on the animal body GPC -2 ID-3 Possess an understanding of the emergence of living organisms, levels of organization of living matter, favorable and unfavorable factors affecting the body; the basis for the study of ecological knowledge of the surrounding world, the laws of development of nature and society; skills of observation, comparative analysis, historical and experimental modeling of the impact of anthropogenic and economic factors on living objects, including using digital technologies	3	1	2		4
9.	Breeding work and the main planned breeds and crosses of agricultural poultry.	GPC -2 Able to interpret and evaluate in professional activities the influence of natural, socio-economic, genetic and economic factors on the physiological state of an animal's body GPC -2 ID-1 Know environmental factors, their classification and the nature of relationships with living organisms; basic ecological concepts, terms and laws of bioecology; interspecific	3	1	2		4

		relationships between animals and plants, predator and prey, parasites and hosts; environmental features of certain types of pathogenic microorganisms; mechanisms of influence of anthropogenic and economic factors on the animal body GPC -2 ID-2 Be able to use environmental factors and environmental laws in agricultural production; apply the achievements of modern microbiology and ecology of microorganisms in animal husbandry and veterinary medicine in order to prevent infectious and invasive diseases and treat animals; use environmental monitoring methods during environmental assessment of agro-industrial complex objects and production of agricultural products, including using digital technologies; assess the impact of anthropogenic and economic factors on the animal body GPC -2 ID-3 Possess an understanding of the emergence of living organisms, levels of organization of living matter, favorable and unfavorable factors affecting the body; the basis for the study of ecological knowledge of the surrounding world, the laws of development of nature and society; skills of observation, comparative analysis, historical and experimental modeling of the impact of anthropogenic and economic factors on living objects, including using digital technologies					
10	Horse breeding in Russia. Biological characteristics of horses.	OPK-2 Able to interpret and evaluate in professional activities the influence of natural, socio-economic, genetic and economic factors on the physiological state of an animal's body OPK-2 ID-1 Know environmental environmental factors, their classification and the nature of relationships with living organisms; basic ecological concepts, terms and laws of bioecology; interspecific relationships between animals and plants, predator and prey, parasites and hosts; environmental features of certain types of pathogenic microorganisms; mechanisms of influence of anthropogenic and economic factors on the animal body OPK-2 ID-2 Be able to use environmental environmental factors and environmental laws in agricultural production; apply the achievements of modern microbiology and ecology of microorganisms in animal husbandry and veterinary medicine in order to prevent infectious and invasive diseases and treat animals; use environmental monitoring methods during environmental assessment of agro-industrial complex objects and production of agricultural products, including using digital technologies; assess the impact of anthropogenic and economic factors on the animal body GPC-2 ID-3 Possess an understanding of the emergence of living organisms, levels of organization of living matter, favorable and unfavorable factors affecting the body; the basis for the study of ecological knowledge of the surrounding world, the laws of development of nature and society; skills of observation, comparative analysis, historical and experimental modeling of the impact of anthropogenic and economic factors on living objects, including using digital technologies	3	1	6		4
11	The main planned breeds of horses.	GPC -2 Able to interpret and evaluate in professional activities the influence of natural, socio-economic, genetic and economic factors on the physiological state of an animal's body	3	1			4
12	Sheep and goat breeding in Russia. Biological characteristics and productivity of sheep	GPC -2 ID-1 Know environmental environmental factors, their classification and the nature of relationships with living organisms; basic ecological concepts, terms and laws of bioecology; interspecific relationships between animals and plants, predator and prey, parasites and hosts; environmental features of certain types of pathogenic microorganisms; mechanisms of influence of	3	1	2		4

	and goats.	anthropogenic and economic factors on the animal body					
13	The main planned breeds of sheep and goats, breeding work in sheep and goat breeding.	GPC -2 Able to interpret and evaluate in professional activities the influence of natural, socio-economic, genetic and economic factors on the physiological state of an animal's body GPC -2 ID-1 Know environmental environmental factors, their classification and the nature of relationships with living organisms; basic ecological concepts, terms and laws of bioecology; interspecific relationships between animals and plants, predator and prey, parasites and hosts; environmental features of certain types of pathogenic microorganisms; mechanisms of influence of anthropogenic and economic factors on the animal body GPC -2 ID-2 Be able to use environmental environmental factors and environmental laws in agricultural production; apply the achievements of modern microbiology and ecology of microorganisms in animal husbandry and veterinary medicine in order to prevent infectious and invasive diseases and treat animals; use environmental monitoring methods during environmental assessment of agro-industrial complex objects and production of agricultural products, including using digital technologies; assess the impact of anthropogenic and economic factors on the animal body GPC-2 ID-3 Possess an understanding of the emergence of living organisms, levels of organization of living matter, favorable and unfavorable factors affecting the body; the basis for the study of ecological knowledge of the surrounding world, the laws of development of nature and society; skills of observation, comparative analysis, historical and experimental modeling of the impact of anthropogenic and economic factors on living objects, including using digital technologies	3		2		6
		TOTAL:		**16**	**28**	**6**	**58**

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.

Self-work over the discipline "Veterinary and sanitary expertise" allow to develop skills on the principles of veterinary and sanitary control of the rational use of animal and plant products (controlled by gosvetnadzor), as well as raw materials (for industrial processing of farm and natural fishing resources); environmental protection technologies and equipments; fundamentals of technologies, technical regulation and standardization, professional responsibility; international cooperation in the field of veterinary and sanitary expertise, food safety and protection of the territory of the Russian Federation from the introduction of infectious zooanthroponous and animal diseases; environmental protection; human consciousness and society for the development of the agro-industrial complex of the Russian Federation.

Students self-work illustrates the development of the following qualification requirements:

the ability to identify problems and interests in the field of quality control and food safety;

the ability to set an adequate goal, determine the sequence of tasks;

the ability to find optimal solutions, effective means and methods to achieve the goal;

the ability to find the necessary information using modern technologies, classify and systematize it;

the ability to conduct scientific research in the field of food expertise;

the ability to present the results of their activities, both in written and oral form for the procedure of public presentation, as well as lectures;

the ability to master the skills of effective business cooperation.

Students self-work over the discipline "Veterinary and sanitary expertise" is the main way of mastering educational material. It is carried out in order to:

develop and assimilate the educational material of the discipline;

consolidate and ameliorate knowledge, skills and abilities;

prepare for upcoming classes and control tasks;

form the culture of intellectual work, independency and initiative in research and education.

Students self-work includes the development of theoretical material and preparation for practical classes in the basics of technical regulation and standardization of livestock products, TR and GSS of the Russian Federation, the HACCP system, food safety requirements: meat and meat products, milk and dairy products, fish and fish products, raw materials and technological processes of children's and specialized nutrition and others. food security issues.

The forms of student's self-work over the discipline "Veterinary and sanitary expertise" are:

acquaintance with the work program;

making notes and processing lecture material;

preparation for group classes, including:

a) selection of necessary sources of information (literature, online publications, regulatory framework);

b) taking notes of educational, methodological and scientific literature;

c) processing and analysis of laws and regulations;

d) self-control of the processed questions and topics of the curriculum;

In addition, students self-work in a free form is realized through the preparation of reports and articles for student scientific conferences on the problems of veterinary and sanitary expertise, food security, rational development of the agro-industrial complex of the Russian Federation and the use of natural resources, innovative technologies and technical regulation in

the field of veterinary and sanitary expertise, processing of meat, poultry, dairy, etc. raw materials, eggs, honey and bee products, vegetable raw materials, raw materials for food ghee of animal origine, the use of biotechnology.

During the practical classes, the discussion of the topic is conducted in a free creative form. Students discuss with the teacher not only the questions formulated in the educational and methodological complex, but also ask questions that they have during preparation for the seminar, and state their own position on a particular problematic issue in a reasoned manner.

Preparing for the lesson involves the study of theoretical lecture material and regulatory documents. When solving problems, it is recommended to analyze the conditions, formulate a solution clearly and competently, giving references to the relevant legal norms. In order to assimilate the material and better prepare for future professional activity, it is necessary to strive to change the conditions of the task in order to choose the best solution to a specific life situation.

The type of tasks for students' self-work is determined by the teacher through the work program and assessment funds.

Educational and methodological materials for self-work of disabled students are provided in forms adapted to the limitations of their health and perception of information and can be specified depending on the contingent of students.

6.1. Guidelines for self -work

1.Methodological instructions for completing test assignments for students of the correspondence veterinary faculty in the discipline "Breeding farm animals with the basics of private animal science" / compiled by: P. I. Ukolov, O. G. Sharaskina; Ministry of Agriculture of the Russian Federation, SPbGAVM. - St. Petersburg: Publishing house SPbGAVM, 2013. - 40 p. – URL: Method. instructions for release counter. ass for correspondence students veteri - Access mode: for authorization. users of the SPbSUVM EB.

6.2. Literature for self-work

1. Zhigachev, A. I. Breeding farm animals with the basics of private animal husbandry: textbook / A. I. Zhigachev. - 2. - St. Petersburg: Quadro, 2022. - 432 p. — ISBN 978-5-906371-01-0. — Text: electronic // Electronic library system Elibrica: [website]. — URL: https://elibrica.com/a14bc487-ecf1-4505-bf45-5056a08edd23 (access date: 27.04.2024). — Access mode: for authorized users. users

2. Horse breeding: textbook / Kozlov Sergey Anatolyevich, Parfenov Vadim Alekseevich. - St. Petersburg: Lan, 2004. - 304 p. : ill. - (Textbooks for universities. Special literature)..

3. Cattle breeding: textbook / Kostomakhin Nikolai Mikhailovich. - 2nd ed., erased. - St. Petersburg: Lan, 2009. - 432 p. - (Textbooks for universities. Special literature)

4. Poultry farming / Kocish Ivan Ivanovich, Petrash Mikhail Grigorievich, Smirnov Sergey Borisovich. - Moscow: KolosS, 2004. - 407 p. : ill. - (Textbooks and teaching aids for university students).

5. Ukolov, P. I. Constitution and exterior of farm animals: textbook / P. I. Ukolov, O. G. Sharaskina, I. A. Chizhik. - 2. - St. Petersburg: Quadro, 2022. - 304 p. — ISBN 978-5-906371-11-9. — Text: electronic // Electronic library system Elibrica: [website]. — URL: https://elibrica.com/e0dbb400-1b5d-4ae0-a586-66a65fef33e6 (access date: 27.04.2024). — Access mode: for authorized. users)

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

7.1. Basic literature

1.Zhigachev, A. I. Breeding farm animals with the basics of private animal husbandry: textbook / A. I. Zhigachev. - 2. - St. Petersburg: Quadro, 2022. - 432 p. — ISBN 978-5-906371-01-0. — Text: electronic // Electronic library system Elibrica: [website]. — URL: https://elibrica.com/a14bc487-ecf1-4505-bf45-5056a08edd23 (access date: 27.04.2024). — Access mode: for authorized. users.

2. Workshop on breeding farm animals with the basics of private animal husbandry: [approved by the Ministry of Agriculture of the Russian Federation]: textbook / Zhigachev Anatoly Ivanovich, Ukolov Petr Ivanovich, Ville Andrey Vilgelmovich, Sharaskina Olga Gennadievna. - Moscow: KolosS, 2009. - 232 p. : ill. - (Textbooks and teaching aids for students of higher educational institutions).

3. Zhigachev, A. I. Workshop on breeding farm animals with the basics of private animal husbandry: textbook / A. I. Zhigachev, P. I. Ukolov, O. G. Sharaskina. - 2. - St. Petersburg: Quadro, 2022. - 336 p. — ISBN 978-5-906371-49-2. — Text: electronic // Electronic library system Elibrica: [website]. — URL: https://elibrica.com/db6b6872-526e-492f-93f4-66ff140d26e1 (access date: 27.04.2024). — Access mode: for authorized. Users

7.2. Additional literature

1. Kuznetsov, A. F. (ed.) Horse breeding: hygiene of keeping, reproduction and feeding of horses: textbook / A. F. Kuznetsov (ed.). - 1. - St. Petersburg: Quadro, 2022. - 448 p. — ISBN 978-5-906371-27-0. — Text: electronic // Electronic library system Elibrica: [website]. — URL: https://elibrica.com/30be9c42-bf9c-44e8-a491-4fc166992527 (access date: 27.04.2024). — Access mode: for authorized. users

2. Shevkhuzhev, A.F. Meat cattle breeding and beef production: a textbook for universities / A.F. Shevkhuzhev, G.P. Legoshin. — 4th ed., erased. - St. Petersburg: Lan, 2021. - 380 p. — ISBN 978-5-8114-7642-8. — Text: electronic // Lan: electronic library system. — URL: https://e.lanbook.com/book/163400 (access date: 27.04.2024). — Access mode: for authorization. users.

3. Chupina, L. V. Poultry farming. Poultry meat production technology: educational manual / L. V. Chupina, V. A. Reimer. - Novosibirsk: NSAU, 2013. - 58 p. — Text: electronic // Lan: electronic library system. — URL: https://e.lanbook.com/book/44525 (access date: 27.04.2024). — Access mode: for authorization. users.

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

Electronic library systems

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

1. 1. EB "SPbGUVM"
2. EBS "Publishing house "Lan"
3. Legal reference system “ConsultantPlus”
4. University information system “RUSSIA”
5. Full-text database POLPRED.COM
6. Scientific electronic library ELIBRARY.RU

7. Russian Scientific Network

8. Electronic library system IQlib

9. Database of international science citation indexes WebofScience

10. Full-text interdisciplinary database on agricultural and environmental sciences ProQuest AGRICULTURAL AND ENVIRONMENTAL SCIENCE DATABASE

11. Electronic books from the publishing house "Prospekt Nauki" http://prospektnauki.ru/ebooks/

Collection "Agriculture. Veterinary" publishing house "Kvadro" https://elibrica.com/

13.http://plinor.spb.ru/index.php?l=0&p=142 – PLINOR website

9. METHODOLOGICAL GUIDELINES FOR STUDENTS ON EDUCATION OF THE DISCIPLINE

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

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

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

The morning time is the most fruitful for educational work (from 8-14 o'clock), then the afternoon (from 16-19 o'clock) and the evening time (from 20-24 o'clock). 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 (10-15 minutes) is required; after 4 hours of work, the break should be 1 hour. Part of the scientific organization of labor is mastering the technique of mental work. Normally, a student should devote about 10 hours a day to studying (6 hours at the university, 4 hours at home).

• Recommendations for working on lecture material

When preparing for a lecture, the student is recommended to:

1) review the recordings of the previous lecture and recall previously studied material in memory;

2) it is useful to review the upcoming material of the future lecture;

3) if independent study of individual fragments of the topic of the last lecture is assigned, then it must be completed without delay;

4) prepare yourself psychologically for the lecture.

This work includes two main stages: taking notes of lectures and subsequent work on lecture material.

Note-taking means drawing up notes, i.e. a brief written statement of the content of something (oral presentation - speech, lecture, report, etc. or a written source - document, article, book, etc.).

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

By taking notes from written sources, the student has the opportunity to repeatedly read the desired passage of 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. While listening to a lecture, the student must put off most of the above-mentioned work 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 from a lecture, it is recommended to separate fields on each page for subsequent entries in addition to the notes.

After recording a lecture or taking notes, you should not leave work on the lecture material until you begin preparing for the test. It is necessary to do as early as possible the work that accompanies note-taking of written sources and which was not possible to do while recording the lecture - read your notes, deciphering individual abbreviations, analyze the text, establish logical

connections between its elements, in some cases show them graphically, highlight main thoughts, note issues that require additional processing, in particular, teacher consultation.

When working on the text of a lecture, the student needs to pay special attention to the problematic questions posed by the teacher when giving the lecture, as well as to his assignments and recommendations.

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

• Recommendations for preparing for practical classes

Practical (seminar) classes constitute an important part of students' professional training. The main goal of conducting practical (seminar) classes is to develop analytical, creative thinking in students by acquiring practical skills. Practical classes are also conducted with the aim of deepening and consolidating the knowledge gained at lectures and in the process of independent work on regulatory documents, educational and scientific literature. When preparing for a practical lesson for students, it is necessary to study or repeat theoretical material on a given topic.

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

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

2) study the literature sources that were recommended and familiarize yourself with the introductory comments to the relevant sections.

Methodological instructions 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 curriculum of the disciplines in the sections "List of topics for practical (seminar) classes."

The most important component of any form of practical training is assignments. The basis of the assignment is an example, which is analyzed from the perspective of the theory developed in the lecture. As a rule, the main attention is paid to the formation of specific skills and abilities, which determines the content of students' activities - problem solving, laboratory work, clarification of the 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 attention 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 check the correctness of previously acquired knowledge;
- instill skills of independent thinking and oral presentation;
- promote free use of terminology;
- provide the teacher with the opportunity to systematically monitor the level of students' independent work.

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

• Recommendations for working with literature.

Working with literature is an important stage of a student's independent work in mastering a subject, contributing not only to consolidation of knowledge, but also to broadening his

horizons, mental abilities, memory, ability to think, present and confirm his hypotheses and ideas. In addition, research skills necessary for future professional activities are developed.

When starting to study literature on a topic, it is necessary to make notes, extracts, and notes. It is imperative to take notes on the works of theorists, which allow one to comprehend the theoretical basis of the study. For the rest, we can limit ourselves to extracts from studied sources. All extracts and quotations must have an exact "return address" (author, title of work, year of publication, page, etc.). It is advisable to write an abbreviated name of the question to which the extract or quotation relates. In addition, you must learn to immediately compile a card index of specialized 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.) write on separate cards, which must be filled out in accordance with 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 - name of the journal, year of publication, numbers pages). 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 further 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 contents, structure, what sources it was written on, etc.

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

Testing is a check that allows you to determine whether the actual behavior of the program corresponds to the expected behavior 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 being tested or its part. Each question in the discipline must be answered correctly by choosing one option.

10. EDUCATIONAL SOCIAL 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. 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**
Breeding and the basics of private animal husbandry	405 (196084, St. Petersburg, Chernigovskaya str., 5) Classroom for lecture-type classes, seminar-type classes, group and individual consultations, ongoing monitoring and intermediate certification	*Specialized furniture*: desks, chairs *Technical training tools*: video projector, slide presentations on the parts of the discipline
	406 (196084, St. Petersburg, Chernigovskaya str., 5) Educational laboratory of the department	*Specialized furniture:* laboratory tables, chairs, DE-4 aquadistilator, laboratory scales, analytical registration scales, vacuum drying SPT-200, projection trichinelloscope, laboratory milk centrifuge "OKA", Gerber centrifuges, microscopes "Biolam", water bath, colorimeter photoelectric concentrator, "Gastros", laboratory pHmeter "Status", electronic milk quality analyzers – "Clover", "Lactane 1-4"; refractometers, viscometer, Somatos Mini somatic cell analyzer in milk, ovoscope, Filin luminoscope, VK-75 sterilizer, posters and visual material: standards TR, GOST R, SanPiN
	206 Large reading room (196084, St. Petersburg, Chernigovskaya str., 5) Room for self-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, Chernigovskaya str., 5) Room for self-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, Chernigovskaya str., 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, Chernigovsaya str., 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

Developers:

Candidate of Biological Science, Associate Professor P.I. Ukolov

Candidate of Biological Science, Associate Professor Yu. V. Mukiy

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 feeding and breeding animals

FUND OF ASSESMENT TOOLS
for the discipline

"Breeding and the basics of private animal husbandry"

Level of higher education
SPECIALIST COURSE

Specialty 05.36.01 Veterinary medicine
Full-time education.

Education starts in 2024.

Saint Petersburg
2024

1. PASSPORT OF THE FUND OF ASSESMENT TOOLS

Table 1

№	Acquired competence	Assessed modules of a discipline	Assesment tool
1.	GPC-2. Is able to interpret and evaluate in professional activity the influence of natural, socio-economic, genetic and economic factors on the physiological status of the animal body. GPC-2 ID-1 To know: ecology factors of the environment, its classification and the nature of relationships with living organisms; basic ecological concepts; interspecific relations of animals and plants, terms and bio ecology laws, parasites and hosts; ecological features of some types of pathogenic microorganisms; mechanisms of influence of anthropogenic and economic factors on the animal body. GPC-2 ID-2 To be able to: use environmental factors and environmental laws in agricultural manufacture; apply the achievements of modern microbiology and ecology of microorganisms in animal husbandry and veterinary medicine in order to prevent infectious and invasive diseases and treat animals; use environmental monitoring methods in the environmental assessment of agricultural facilities and the production of agricultural products; assess the impact on the animal body, anthropogenic and economic factors GPC-2 ID-3 To possess skills of: the knowledge of the origin of living organisms, the levels of organization of living matter, favorable and unfavorable factors affecting the body; the basis for studying environmental knowledge of the environment, the laws of the development of nature and society; skills of observation, comparative analysis, historical and experimental modeling of the impact of anthropogenic and economic factors on living objects, with the use of digital technologies as well. PC-18. Is able to carry out veterinary and sanitary expertise, manage the production and certification of livestock products, beekeeping, aquatic fisheries and feed, as well as transport rules of animals and goods during export and import operations to ensure food safety, carry out a sanitary assessment of livestock facilities and structures PC-18 ID-1 To be able to carry out veterinary and sanitary pre-slaughter inspection of animals and poultry, post-slaughter veterinary and sanitary examination of carcasses and organs; correctly assess the quality and control of agricultural output; assess the condition of controlled products according to organoleptic properties and laboratory results using digital technologies, control the operating parameters of all links in the processing of livestock raw materials; organize and control transportation of slaughtered animals, raw materials, products of animal and vegetable origin; to determine the species of animal meat; to carry out bacteriological analysis of meat and its products; to use methods of technochemical control of canned products of animal and vegetable origin PC-18 ID-2 To know the government standards in the field of veterinary and sanitary expertise and control of the production of safe livestock products, keeping, aquatic fisheries and feed, as well as plant products; rules for veterinary and sanitary examination and quality control of food of animal origin; preventive measures of zoonoses; modern means and methods of disinfection, disinsection and deratization of slaughterhouses and meat processing enterprises; norms and rules for the organization and control of transportation of animals, raw materials, products of animal origin, bee products and aquatic fisheries; biology and life cycles of animals that cause zoonoses, as well as factors of its infection; basic concepts and terms in the field of controling the quality of animal slaughter products, its chemical composition, nutritional value, quality factors.	Section 1. Patterns of growth and development of animals.	Abstrakt, Test, Colloquium
2.		Section 1. Cattle breeding	Abstrakt, Test, Colloquium
3.		Section 1. Pig farming	Abstrakt, Test, Colloquium
4.		Section 1. Horse breeding	Abstrakt, Test, Colloquium
5.		Section 1. Sheep and goat farming	Abstrakt, Test, Colloquium

List of assessment tools

Table 2

№	Name of the assessment tool	Brief description of the assesment tool	Presentation of the assessment tool in the fund
1.	Colloquium	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/sections 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.	Abstract	The result of the student's independent work, which is a summary in writing in the form of results, theoretical analysis (educational and research) topic, where the author reveals the essence of the problem, gives different points of view, as well as views on it	Abstract topics

2. INDICATORS AND CRITERIA FOR ASSESSING COMPETENCIES AT VARIOUS STAGES OF ITS FORMATION, DESCRIPTION OF ASSESSMENT SCALES

Planned results of competency acquaired	The level of development				Assesment tool
	Unsatisfactory	Satisfactory	Good	Exellent	
• Is able to interpret and evaluate in professional activity the influence of natural, socio-economic, genetic and economic factors on the physiological status of the animal body (GPC-2)					

GPC-2. Is able to interpret and evaluate in professional activity the influence of natural, socio-economic, genetic and economic factors on the physiological status of the animal body. GPC-2 ID-1 To know: ecology factors of the environment, its classification and the nature of relationships with living organisms; basic ecological concepts; interspecific relations of animals and plants, terms and bio ecology laws, parasites and hosts; ecological features of some types of pathogenic microorganisms; mechanisms of influence of anthropogenic and economic factors on the animal body. GPC-2 ID-2 To be able to: use environmental factors and environmental laws in agricultural manufacture; apply the achievements of modern microbiology and ecology of microorganisms in animal husbandry and veterinary medicine in order to prevent infectious and invasive diseases and treat animals; use environmental monitoring methods in the environmental assessment of agricultural facilities and the production of agricultural products; assess the impact on the animal body, anthropogenic and economic factors GPC-2 ID-3 To possess skills of: the knowledge of the origin of living organisms, the levels of organization of living matter, favorable and unfavorable factors affecting the body; the basis for studying environmental knowledge of the environment, the laws of the development of nature and society; skills of observation, comparative analysis, historical and experimental modeling of the impact of anthropogenic and economic factors on living objects, with the use of digital technologies as well. PC-18. Is able to carry out veterinary and sanitary expertise, manage the production and certification of livestock products, beekeeping, aquatic fisheries and feed, as well as transport rules of animals and goods during export and import operations to ensure food safety, carry out a sanitary assessment of livestock facilities and structures PC-18 ID-1 To be able to carry out veterinary and sanitary pre-slaughter inspection of animals and poultry, post-slaughter veterinary and sanitary examination of carcasses and organs; correctly assess the quality and control of agricultural output; assess the condition of controlled products according to organoleptic properties and laboratory results using digital technologies, control the operating parameters of all links in the processing of livestock raw materials; organize and control transportation of slaughtered animals, raw materials, products of animal and vegetable origin; to determine the species of animal meat; to carry out bacteriological analysis of meat and its products; to use methods of technochemical control of canned products of animal and vegetable origin PC-18 ID-2 To know the government standards in the field of veterinary and sanitary expertise and control of the production of safe livestock products, keeping, aquatic fisheries and feed, as well as plant products; rules for veterinary and sanitary examination and quality control of food of animal origin; preventive measures of zoonoses; modern means and methods of disinfection, disinsection and deratization of slaughterhouses and meat processing enterprises; norms and rules for the organization and control of transportation of animals, raw materials, products of animal origin, bee products and aquatic fisheries; biology and life cycles of animals that cause zoonoses, as well as factors of its infection; basic concepts and terms in the field of controling the quality of animal	The level of knowledge is below the minimum requirements, gross errors have occurred	The minimum acceptable level of knowledge, many minor errors have been made	The level of knowledge corresponds to the training program, several minor errors have been made	The level of knowledge corresponds to the training program, no errors have been made	Abstrakt, Test, Colloquium
	Basic skills were not demonstrated in solving standard tasks, and gross errors occurred	Basic skills have been demonstrated, typical problems have been solved with minor errors, all tasks have been completed, but not in full	All the basic skills have been demonstrated, all the main tasks have been solved with minor errors, all the tasks have been completed in full, but some with flaws	All basic skills have been demonstrated, all main tasks have been solved with some minor flaws, all tasks have been completed in full	Abstrakt, Test, Colloquium
	When deciding standard tasks Not demonstrated basic skills there were rough errors	Accessible minimum set skills for solutions standart tasks with flaws очетами	Basic skills demonstrated when deciding standard tasks with shortcomings	Demonstrated skills in decision non-standard tasks without errors and shortcomings	Abstrakt, Test, Colloquium

slaughter products, its chemical composition, nutritional value, quality factors.					

3. LIST OF CONTROL ASSIGNMENTS AND OTHER MATERIALS NECESSARY FOR ASSESSING KNOWLEDGE, SKILLS, ABILITIES AND EXPERIENCE

3.1 Standard Assignments for Ongoing Performance Assessment

3.1.1. Questions for the Colloquium Questions for evaluating competence:
GPC-2. Ability to interpret and evaluate in professional activities the impact on the physiological state of animals of natural, socio-economic, genetic, and economic factors.
GPC-2 ID-1: Know the environmental factors of the surrounding environment, their classification, and the nature of relationships with living organisms; basic ecological concepts, terms, and laws of bioecology; interspecies relationships of animals and plants, predators and prey, parasites and hosts; ecological characteristics of certain pathogenic microorganisms; mechanisms of the influence of anthropogenic and economic factors on animal organisms.
GPC-2 ID-2: Be able to use environmental factors and ecology laws in agricultural production; apply achievements of modern microbiology and microbial ecology in livestock and veterinary medicine for the prevention and treatment of infectious and invasive diseases in animals; use methods of ecological monitoring in the environmental assessment of agricultural facilities and production, including the use of digital technologies; evaluate the impact of anthropogenic and economic factors on animal organisms.
GPC-2 ID-3: Possess an understanding of the origin of living organisms, levels of organization of living matter, favorable and unfavorable factors affecting organisms; the basis for studying the ecological understanding of the surrounding world, the laws of nature and society development; skills in observation, comparative analysis, historical and experimental modeling of the impact of anthropogenic and economic factors on living objects, including using digital technologies.

Section "Patterns of Growth and Development of Animals":

1. Concept of growth and development.
2. Indicators for assessing growth and development.
3. What is the essence of the Chervinsky-Maligov Law?
4. What is embryonism and infantilism?
5. What factors influence growth and development?
6. Describe the stages of embryonic development.
7. What is the difference between sexual and economic maturity?
8. Productive usage periods for cattle, horses, sheep, goats, pigs.
9. Indicate causes of animal underdevelopment.
10. Indicate primary measures for preventing various forms of underdevelopment in animals.
11. What forms of pedigree recording are used in livestock breeding?
12. How is the degree of inbreeding determined?
13. What is moderate inbreeding, consanguinity?
14. What is inbred depression?
15. What is the purpose of using inbreeding in animal and poultry breeding?
16. What is the role of inbreeding in the manifestation of hereditary diseases?
17. What is purebred breeding?
18. What are the distinctive features of breed and genealogical lines?
19. What is line crossing, its tasks, and possibilities?
20. How do line founders influence the spread of anomalies and diseases?

21. What are the goals and objectives of industrial crossing?
22. What is hybridization?
23. What is alternating crossing?
24. What is absorptive crossing?
25. What interspecies animal hybrids are used in agriculture?
26. List the methods of exterior assessment.
27. Classification of constitution types.
28. What is the relationship between constitution types and productivity direction and disease resistance in animals?

Section "Cattle Breeding":

1. Characterize the biological features of cattle.
2. Describe the exterior-constitutional features of dairy and beef cattle.
3. Cow appraisal.
4. What factors determine and shape the milk and meat productivity of cattle?
5. Key indicators for accounting for cow milk productivity.
6. Udder forms and their connection to productivity and mastitis resistance.
7. Characteristics of major dairy and beef breeds, methods for evaluating the breeding qualities of bulls.
8. By what criteria are cows selected for stress and mastitis resistance?
9. Methods for assessing the genotype of breeders.
10. Indicators for accounting and evaluating beef cattle.
11. Indicators for accounting and evaluating dairy cattle productivity.
12. Dairy cattle breeds.
13. Industrial classification of cattle breeds.
14. Principles of forming lines and families in purebred breeding.
15. Combined cattle breeds.
16. Beef cattle breeds.
17. Use of hybridization in cattle breeding.
18. Defects and shortcomings of cattle exterior, causes, and prevention methods.
19. Linear assessment of cattle exterior.
20. Genetic anomalies and cattle resistance to certain diseases.
21. Peculiarities of organizing breeding work and large-scale selection in cattle breeding.
22. Selection of dairy cattle for breeding purposes.
23. Organization and techniques of targeted rearing of young cattle.
24. Rearing and testing bulls for their own productivity.
25. Rearing replacement heifers and first-calf heifers.

Section "Pig Breeding":

1. Biological characteristics and economically useful traits of pigs.
2. Herd reproduction in pig breeding.
3. Fundamentals of breeding work in pig breeding. Criteria for selecting pigs for breeding purposes.
4. Features of the continuous-flow production technology of pork.
5. Organization of interbreed crossing and hybridization in pig breeding.
6. Control fattening in pig breeding.
7. Genetic anomalies and pigs' resistance to certain diseases.
8. Large White breed.
9. Breytovsky breed.

10. Kemerovo breed.
11. Siberian Northern breed.
12. Urzhum breed.
13. Livensky breed.
14. Early maturing meat breed.
15. Landrace, Duroc, Yorkshire, Pietrain, and other foreign breeds used in hybridization programs.

Section "Horse Breeding":

1. Importance of horse breeding at the modern stage. Biological characteristics of horses.
2. Evaluation of horse constitution and exterior. Characteristics of the development of individual body parts, their significance, main defects, and shortcomings of limbs.
3. Productive horse breeding.
4. Training and testing of horses.
5. Arabian breed.
6. Akhal-Teke breed.
7. Thoroughbred and half-bred horse breeding.
8. Don and Budyonny breeds.
9. Orlov trotter breed.
10. Soviet and Russian heavy draft breeds.
11. Vladimir heavy draft.
12. Equestrian sports.
13. Accounting and evaluation of horses' working qualities. Rational use of horses.
14. Determining the age of horses.
15. Primary coat colors and markings of horses.

Section "Sheep and Goat Breeding":

1. Biological characteristics of goats.
2. Main breeds and breeding work with them (Saanen and its derivatives, Alpine, Anglo-Nubian, Russian, Orenburg, Soviet wool, Volgograd).
3. Soviet Merino, Askanian breed.
4. Prekos.
5. Tsigai breed.
6. Kuibyshev breed, modern crossbred breeds.
7. Stavropol breed, Manich Merino.
8. Romanov breed, Russian long-wool breed.
9. Altai breed, Transbaikal breed.
10. Breeding work in sheep breeding, individual and class appraisal of sheep.
11. Reproduction of the flock and rearing of young sheep.
12. Productivity of sheep and goats, methods of evaluation and accounting.
13. Basic sheep breeding technologies.
14. Genetic anomalies and sheep resistance to certain diseases.

3.1.2. Term Paper Topics

Topics for term papers to evaluate competence: OPK-2. "Ability to interpret and evaluate in professional activities the impact on the physiological state of animals of natural, socio-economic, genetic, and economic factors."

GPC-2 ID-1: Know the environmental factors, their classification, and the nature of relationships with living organisms; basic ecological concepts, terms, and bioecology laws;

interspecies relationships of animals and plants, predator and prey, parasites and hosts; ecological characteristics of certain pathogenic microorganisms; mechanisms of the influence of anthropogenic and economic factors on animal organisms.
GPC -2 ID-2: Be able to use environmental factors and ecology laws in agricultural production; apply achievements of modern microbiology and microbial ecology in livestock and veterinary medicine to prevent and treat infectious and invasive diseases in animals; use methods of ecological monitoring in the environmental assessment of agricultural facilities and production, including the use of digital technologies; evaluate the impact of anthropogenic and economic factors on animal organisms.
GPC -2 ID-3: Possess an understanding of the origin of living organisms, levels of organization of living matter, favorable and unfavorable factors affecting organisms; the basis for studying the ecological understanding of the surrounding world, the laws of nature and society development; skills in observation, comparative analysis, historical and experimental modeling of the impact of anthropogenic and economic factors on living objects, including using digital technologies.

1. Current state and development prospects of:
    - cattle breeding (general, dairy, beef);
    - pig breeding (general, lard, meat, bacon, etc.);
    - horse breeding (breeding, productive, sport);
    - sheep breeding;
    - poultry farming (egg, meat, general);
    - goat breeding.
2. Current state and development prospects of:
    - cattle;
    - pigs;
    - horses;
    - sheep;
    - goats;
    - chickens, geese, etc.
3. Modern methods of rearing young:
    - cattle;
    - pigs;
    - horses;
    - sheep;
    - goats;
    - chickens, geese, etc.
4. Modern methods of accounting and assessing (dairy, meat, work, wool, etc.) productivity of:
    - cattle;
    - pigs;
    - horses;
    - sheep;
    - goats;
    - chickens, geese, etc.
5. Promising breeds of (cattle, pigs, sheep, poultry) in:
    - dairy cattle breeding;
    - beef cattle breeding;
    - meat-dairy and dairy-meat cattle breeding;
    - meat and bacon pig breeding;

- meat-lard pig breeding;
- egg poultry farming;
- meat poultry farming;
- sport horse breeding;
- breeding horse breeding;
- dairy goat breeding;
- downy goat breeding;
- wool sheep breeding;
- meat-wool sheep breeding;
- dairy sheep breeding.

3.1.3. Tests

Tests for evaluating competence: OPK-2. "Ability to interpret and evaluate in professional activities the impact on the physiological state of animals of natural, socio-economic, genetic, and economic factors."

GPC -2 ID-1: Know the environmental factors, their classification, and the nature of relationships with living organisms; basic ecological concepts, terms, and bioecology laws; interspecies relationships of animals and plants, predator and prey, parasites and hosts; ecological characteristics of certain pathogenic microorganisms; mechanisms of the influence of anthropogenic and economic factors on animal organisms.
GPC -2 ID-2: Be able to use environmental factors and ecology laws in agricultural production; apply achievements of modern microbiology and microbial ecology in livestock and veterinary medicine to prevent and treat infectious and invasive diseases in animals; use methods of ecological monitoring in the environmental assessment of agricultural facilities and production, including the use of digital technologies; evaluate the impact of anthropogenic and economic factors on animal organisms.
GPC -2 ID-3: Possess an understanding of the origin of living organisms, levels of organization of living matter, favorable and unfavorable factors affecting organisms; the basis for studying the ecological understanding of the surrounding world, the laws of nature and society development; skills in observation, comparative analysis, historical and experimental modeling of the impact of anthropogenic and economic factors on living objects, including using digital technologies.

1. **Wild ancestors of cattle are**: a. Mouflon b. Antelope c. Reindeer d. Aurochs e. Wild boar
2. **Wild ancestors of domestic pigs are**: a. Wild boar b. Zebu c. Bison d. Tarpan e. Argali
3. **Wild ancestors of sheep are**: a. Bison b. Wild goat c. Mouflon, argali, arkhar, argali d. Snow sheep e. Dzeren
4. **Breed is**: a. Herd b. Population c. A coherent group of animals of one species d. Line e. Offspring
5. **Constitution is**: a. General body structure of an organism b. Type of nervous activity c. Type of digestion d. Animal skin e. Internal structure of an organism
6. **Exterior is**: a. Condition b. Animal fatness c. Disease resistance d. Unpretentiousness to feed e. Animal appearance
7. **Interior is**: a. Type of nervous activity b. Internal structure of an organism c. Proportionality of body structure d. The ratio of one measurement to another, expressed as a percentage e. A set of external forms and internal structure

8. **Lactation period is**: a. Period from calving to successful insemination b. Period from successful insemination to dry-off c. Calendar year d. Period from cow calving to cessation of milking e. Period from dry-off to next calving

9. **Meat productivity is characterized by**: a. Tail length b. Slaughter weight, slaughter yield, and meat coefficient c. Growth duration d. Life span e. Head size

10. **Fine wool consists of wool fibers**: a. Bristle b. Guard hair c. Intermediate hair d. Down e. Transitional hair

11. **The main phases in the postembryonic period are**: a. Formation and cleavage of the zygote b. Completion of tissue, organ, and system differentiation c. Neonatal period, milk phase, sexual and functional maturity, peak period, aging d. Ossification of the skeleton e. Muscle formation

12. **Growth is defined as**: a. The process of increasing body size, mass b. Accumulation of fat substances or water c. Volume increase d. Qualitative changes in cell content e. The process of structural complexity

13. **Selection intensity is understood as**: a. Slaughter of the best animals b. Target standard c. Biological inferiority of animals d. The percentage of annual culling or percentage of the best animals introduced into the herd e. Animal adaptation to industrial technology

14. **Selection is**: a. Survival of strong and robust specimens or human choice of the most productive animals b. Pasturing and fattening animals c. Crossbreeding animals of different breeds d. Transferring animals from one farm to another e. Mating related animals

15. **Matching is**: a. Breeding animals of one breed b. Breeding animals of different lines c. Breeding animals of different species d. Evaluation and selection of the most productive animals e. Forming parent pairs

16. **The main criterion for selection in dairy cattle breeding is**: a. Broad-bodied organism b. High-legged cow c. Milk yield for 305 days of lactation and average fat percentage in milk d. Cow's nasal mirror color e. Head and horn size

17. **The main criteria for selecting fine wool sheep are**: a. Density, fineness, and length of wool providing high yield b. High meat productivity c. Life span d. Adaptability to large complexes e. Early maturity

18. **To evaluate a bull by the quality of offspring, you need to have lactating daughters**: a. 5 b. 7 c. 10 d. 15 or more e. 3

19. **To evaluate a boar by the quality of offspring, you need to have at least piglets**: a. 10 b. 12 c. 25 d. 30 or more e. 5

20. **The essence of absorptive crossbreeding is**: a. Breeding animals of different species b. Mating females of one line with males of another line c. Transforming local cattle using cultured breed sires over a long period d. Using sires of another breed to eliminate deficiencies of the breed being bred e. Breeding animals of one breed

21. **The task of reproductive crossbreeding is**: a. Creating a new breed group b. Creating a factory type c. Creating a line d. Creating a family e. Creating a new breed

22. **Heterosis is**: a. Suitability of cows for machine milking b. Effect obtained by crossbreeding animals of two or more breeds c. Exterior defects d. Form of animal underdevelopment e. Unpretentiousness to conditions

23. **Recording animals in the State Pedigree Book is done**: a. For archival data b. For statistical reporting c. To coordinate breeding work throughout the breed d. To enhance the prestige of the farm e. So that future livestock breeders have an idea of the present animals

24. **Hybridization in animal husbandry is conducted**: a. To create new breeds and obtain useful animals b. To obtain record-breaking animals c. For amateur purposes d. To create monsters e. To obtain highly prolific animals

25. **Inbreeding is**: a. Mating animals of different species b. Interbreed crossbreeding c. Mating related animals d. Offspring superiority over one of the parental forms e. Mating unrelated animals

26. **Economic maturity in cattle occurs at**: a. 5-6 months b. 16-18 months c. 2.5-3 years d. 8-9 months e. 10-12 years

27. **Which type is not a production type of pigs**: a. Bacon b. Meat c. Universal d. Dairy-meat e. Lard

28. **Which breed of cattle is not dairy**: a. Charolais b. Black-and-White c. Ayrshire d. Holstein e. Red Steppe

29. **Which breed of goat is downy:** a. Toggenburg b. Orenburg c. Saanen d. Alpine e. Boer

30. **Barmincev's classification of horse breeds does not include**: a. Riding b. Light harness c. Racing d. Heavy harness e. Productive

31. **Negative consequences of inbreeding are called**: a. Selective depression b. Inbred depression c. Heterosis d. Genesis e. Causal genesis

32. **What is the group of female individuals related to the founder through the maternal line called**: a. Family b. Genealogical line c. Genealogical group d. Factory line e. Inbred line

33. **Mating animals of the same factory line is called**: a. Line breeding b. Line crossing c. Blood infusion d. "Refreshing" the blood e. Purebred breeding

34. **Which breeds were developed using interspecies hybridization**: a. Archmerino sheep b. Simmental cattle c. Semirechensk pigs d. Black-and-White cattle e. Altai horses

35. **The period from dry-off to calving is called**: a. Lactation period b. Dry period c. Dry-off d. Service period e. Milking start

36. **The graphical representation of daily or monthly milk yields during lactation is called:** a. Milk yield graph b. Lactation curve c. Milk profile d. Milk yield chart e. Diagram

37. **Indicate the method for determining the average fat content in milk for lactation:** a. By dividing the amount of 1% milk by 100 b. By dividing the sum of the average fat content by the number of lactation months c. By dividing the amount of 1% milk by the

total milk yield for lactation d. By one-time determination in the 2nd month of lactation e. By one-time determination in the last month of lactation

38. **Indicate the method for determining the milk productivity of sows used in practice**: a. Milking sows b. Weighing the litter at 21 days old c. Daily weighing the litter throughout lactation d. Weighing the litter at 60 days old e. Not determined

39. **The weight of a bloodless carcass of cattle with internal fat, without head, skin, internal organs, and limbs (front - to the wrist, rear - to the hock):** a. Live weight after slaughter b. Pre-slaughter weight c. Carcass weight d. Slaughter yield e. No name

40. **Skin with wool removed from a slaughtered sheep and processed in a certain way is called**: a. Sheepskin b. Pelt c. Wool d. Leather raw material e. Karakulcha

41. **Kuleshov's classification of constitution types does not include:** a. Rough b. Delicate c. Loose d. Dense e. Respiratory

42. **Which condition is desirable in breeding animals**: a. Exhibition b. Factory c. Working d. Training e. Fattening

43. **Kumis is:** a. Fermented milk product from mare's milk b. Fermented milk product from cow's milk c. Mare's milk d. Sheep's milk e. Fermented milk product from goat's milk

44. **The color of a horse with sand-colored body hair and black mane, tail, and lower legs is called**: a. Black b. Bay c. Buckskin d. Spotted e. Gray

45. **At what age do horses begin to change milk teeth to permanent:** a. 6-7 months b. 1-1.5 years c. 2-2.5 years d. 5-6 years e. 10-12 years

46. **Which production types are not present in chickens**: a. Downy b. Egg c. Meat d. Meat-egg e. Egg-meat

47. **Eggs from which birds are not used as food**: a. Quail b. Chicken c. Ostrich d. Duck e. Bantam

48. **What does the "SO" marking on a commercial egg mean**: a. Super selected b. Table disinfected c. Table selected d. Contains Omega acids e. Grade "Selected"

49. **An egg is considered dietary if**: a. Within 7 days of laying b. With reduced fat content c. Enriched with selenium d. Within 25 days of laying e. Enriched with vitamins

50. **An egg is considered dietary if:** a. Within 7 days of laying? b. With reduced fat content, c. Enriched with selenium, d. Within 25 days of laying, e. Enriched with vitamins

Test Answers

1	D	**11**	D	**21**	C	**31**	C	**41**	Б
2	A	**12**	C	**22**	E	**32**	B	**42**	Д
3	C	**13**	A	**23**	B	**33**	A	**43**	Б
4	C	**14**	D	**24**	C	**34**	A	**44**	A
5	A	**15**	A	**25**	A	**35**	A	**45**	B
6	E	**16**	E	**26**	C	**36**	B	**46**	B
7	B	**17**	C	**27**	B	**37**	B	**47**	A
8	D	**18**	A	**28**	D	**38**	C	**48**	Г
9	E	**19**	D	**29**	A	**39**	B	**49**	B

10	B	**20**	B	**30**	B	**40**	C	**50**	A

3.2. Standard Assignments for Intermediate Certification

3.2.1. Questions for Credit

Formed Competence: Ability to interpret and evaluate in professional activities the impact on the physiological state of animals of natural, socio-economic, genetic, and economic factors (GPC -2).

GPC -2 ID-1: Know the environmental factors, their classification, and the nature of relationships with living organisms; basic ecological concepts, terms, and bioecology laws; interspecies relationships of animals and plants, predator and prey, parasites and hosts; ecological characteristics of certain pathogenic microorganisms; mechanisms of the influence of anthropogenic and economic factors on animal organisms.

GPC -2 ID-2: Be able to use environmental factors and ecology laws in agricultural production; apply achievements of modern microbiology and microbial ecology in livestock and veterinary medicine for the prevention and treatment of infectious and invasive diseases in animals; use methods of ecological monitoring in the environmental assessment of agricultural facilities and production, including the use of digital technologies; evaluate the impact of anthropogenic and economic factors on animal organisms.

GPC -2 ID-3: Possess an understanding of the origin of living organisms, levels of organization of living matter, favorable and unfavorable factors affecting organisms; the basis for studying the ecological understanding of the surrounding world, the laws of nature and society development; skills in observation, comparative analysis, historical and experimental modeling of the impact of anthropogenic and economic factors on living objects, including using digital technologies.

1. Concept of growth and development.
2. Indicators for assessing growth and development.
3. What is the essence of the Chervinsky-Maligov Law?
4. What is embryonism and infantilism?
5. What factors influence growth and development?
6. Describe the stages of embryonic development.
7. What is the difference between sexual and economic maturity?
8. Productive usage periods for cattle, horses, sheep, goats, and pigs.
9. Indicate causes of animal underdevelopment.
10. Indicate primary measures for preventing various forms of underdevelopment in animals.
11. What forms of pedigree recording are used in livestock breeding?
12. How is the degree of inbreeding determined?
13. What is moderate inbreeding, consanguinity?
14. What is inbred depression?
15. What is the purpose of using inbreeding in animal and poultry breeding?
16. What is the role of inbreeding in the manifestation of hereditary diseases?
17. What is purebred breeding?
18. What are the distinctive features of breed and genealogical lines?
19. What is line crossing, its tasks, and possibilities?
20. How do line founders influence the spread of anomalies and diseases?
21. What are the goals and objectives of industrial crossing?
22. What is hybridization?
23. What is alternating crossing?
24. What is absorptive crossing?
25. What interspecies animal hybrids are used in agriculture?
26. List the methods of exterior assessment.

27. Classification of constitution types.
28. What is the relationship between constitution types and productivity direction and disease resistance in animals?
29. Characterize the biological features of cattle.
30. Describe the exterior-constitutional features of dairy and beef cattle.
31. Cow appraisal.
32. What factors determine and shape the milk and meat productivity of cattle?
33. Key indicators for accounting for cow milk productivity.
34. Udder forms and their connection to productivity and mastitis resistance.
35. Characteristics of major dairy and beef breeds, methods for evaluating the breeding qualities of bulls.
36. By what criteria are cows selected for stress and mastitis resistance?
37. Methods for assessing the genotype of breeders.
38. Characteristics of exterior defects in pigs.
39. Classification of pig breeds.
40. How is the milk production of sows evaluated?
41. Pig appraisal.
42. Evaluation of the breeding qualities of boars.
43. Methods for assessing the exterior and constitution of horses.
44. Characteristics of defects and shortcomings that reduce the working capacity of horses.
45. Characteristics of the working qualities of horses.
46. Horse breeds.
47. Indicators for accounting and evaluating meat productivity in poultry.
48. Indicators for accounting and evaluating egg productivity in poultry.
49. Breeds and crosses of chickens.
50. Production classification of sheep breeds.
51. Indicators for assessing the wool productivity of sheep and goats.
52. How is the milk production of sheep and goats determined?
53. Classification and main breeds of goats in Russia.
54. Principles of forming lines and families in purebred breeding.
55. Fleece and its morphological composition.
56. Wool defects.
57. Classification of sheepskin.
58. Definitions of horse coat colors and markings.
59. Defects and shortcomings of the forelimbs of horses.
60. Defects and shortcomings of the hind limbs of horses.

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

Criteria for evaluating students' knowledge during colloquium

- Mark "excellent" - the student clearly expresses his point of view on the issues under consideration, giving relevant examples.
- Mark "good" - the student makes some errors in the answer

• Mark “satisfactory” - the student reveals gaps in knowledge of the basic educational and normative material.
• Mark “unsatisfactory” - the student reveals significant gaps in knowledge of the basic principles of the discipline, inability, with the help of the teacher, to obtain the correct solution to a specific practical problem.

Criteria for evaluating students' knowledge during testing

The test result is assessed on a percentage rating scale:

- The mark "excellent" is given on the condition that the student answers no less than 90% of the test tasks;
- The mark "good" if the student provides a reasonable answer to at least 80% of the test items;
- The mark "satisfactory" awarded if the student's answer is at least 70% correct;

The mark "unsatisfactory" is awarded if the student answers correctly to less than 70% of test items.

Criteria for assessing students' knowledge when checking abstracts:

• Mark “excellent” - the problem is identified and its relevance is justified; an analysis of various points of view on the problem under consideration was made and one's own position was logically stated; conclusions are formulated, the topic is fully disclosed, the scope is maintained; requirements for external design have been met, basic requirements for the abstract have been met.
• Marked “good” - shortcomings 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.
• Mark “satisfactory” - the topic is only partially covered; there were factual errors in the content of the abstract; there are no conclusions, the topic of the abstract is not disclosed
• Marked “unsatisfactory” - there is a significant misunderstanding of the problem or the abstract is not presented at all.
Knowledge criteria for the test:
• The “pass” grade must correspond to the parameters of any of the positive grades (“excellent”, “good”, “satisfactory”).
• A “failed” grade must meet the parameters of an “unsatisfactory” grade.
• Mark “excellent” – all types of academic work provided for by the curriculum have been completed. The student demonstrates the correspondence of knowledge, skills and abilities to the indicators given in the tables, operates with acquired knowledge, skills and abilities, and applies them in situations of increased complexity. In this case, inaccuracies and difficulties may occur during analytical operations and the transfer of knowledge and skills to new, non-standard situations.
• Mark “good” – all types of educational work provided for by the curriculum have been completed. The student demonstrates the correspondence of knowledge, skills and abilities to the indicators given in the tables, operates with acquired knowledge, skills and

abilities, and applies them in standard situations. In this case, minor errors, inaccuracies, and difficulties during analytical operations and the transfer of knowledge and skills to new, non-standard situations may be made.

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

• Mark "unsatisfactory" - the types of educational work provided for by the curriculum have not been completed. It demonstrates incomplete compliance of knowledge, abilities, skills with those given in the tables of indicators, significant errors are made, a lack of knowledge, abilities, and skills is manifested in a larger number of indicators, the student experiences significant difficulties when operating knowledge and skills when transferring them to new situations.

5. ACCESSIBILITY AND QUALITY OF EDUCATION FOR PERSONS WITH DISABILITIES

If necessary, disabled persons and persons with limited health capabilities must be given additional time to prepare an answer to the test. When carrying out the procedure for assessing the learning outcomes of people with disabilities and people with limited health capabilities, their own technical means can be used. The procedure for assessing the learning outcomes of people with disabilities and persons with limited health capabilities in the disciplinary field provides for the provision of information in forms adapted to the limitations of their health and perception of information:

For people with visual impairments:	– in printed form in enlarged font, – in the form of an electronic document.
For people with hearing loss:	– in printed form, – in the form of an electronic document.
For people with musculoskeletal disorders:	– in printed form, – in the form of an electronic document.

When carrying out the procedure for assessing the learning outcomes of disabled people and persons with limited health capabilities in the discipline, it ensures the fulfillment of the following additional requirements depending on the individual characteristics of the students:

a) instructions on the procedure for conducting the assessment procedure are provided in an accessible form (orally, in writing);

b) an accessible form for submitting assignments of assessment tools (in printed form, in printed form in enlarged font, in the form of an electronic document, assignments are read out by the teacher);

c) an accessible form of providing answers to assignments (written on paper, typing answers on a computer, orally).