Federal State Autonomous Educational Institution for Higher Education PEOPLES' FRIENDSHIP UNIVERSITY OF RUSSIA

Agrarian and Technological Institute

WORKING COURSE SYLLABUS

Cardiology

Recommended by the Methodological Council for the Education Field:

36.05.01 Veterinary medicine

2022

1. GOALS AND OBJECTIVES OF THE DISCIPLINE

The aim of mastering the discipline "**Cardiology**" is to master the methods of detection and differential diagnosis of diseases of the cardiovascular system of animals, as well as the main treatment regimens and methods of prevention of cardiac diseases.

2. REQUIREMENTS FOR THE RESULTS OF MASTERING THE DISCIPLINE

The development of the discipline "**Cardiology**" is aimed at creating the following competencies (parts of competencies) for students:

Table 2.1. List of competencies formed by students during the development of the discipline (results of the development of the discipline)

Code	Competence	Indicators of competence accomplishment (within the discipline)
GPC-2	The ability to interpret and evaluate in professional activity the influence of natural, socio-economic, genetic and economic factors on the physiological state of the animal organism.	GPC-2.1 Has knowledge of the influence of natural, socio-economic, genetic and economic factors on the animal body.
		GPC-2.2 He is able to establish the presence and reliability of cause-and-effect relationships between the effects of certain etiological factors on the animal's body and the development of diseases.
		GPC-2.3 Possesses methods of preventive and curative correction of the effects of adverse environmental factors that can cause deterioration of animal health.
GPC -4	The ability to use methods of solving problems using modern equipment in the development of new technologies in professional activity and to use modern professional methodology for conducting experimental research and interpreting their results.	GPC-4.1 Possesses the conceptual and methodological apparatus of basic natural sciences at a level sufficient for full-fledged professional activity at the modern level.
		GPC-4.2 He knows the methods of solving problems using modern equipment.
		GPC-4.3 He is ready to use modern methodology in the development and conduct of experimental research.
		GPC-4.4 Uses modern professional methodology in interpreting research results.
GPC -5	The ability to draw up special documentation, analyze the results of professional activity and submit accounting	GPC-5.1 Has the skills to search for the necessary forms of documentation on official websites and in specialized databases.

	documents using specialized databases.	GPC-5.2 Possesses professional terminology and skills in filling out analytical and reporting documents of a professional orientation.
		GPC-5.3 He is able to use specialized software to analyze the results of professional activity and compile accounting documentation.
GPC -7	He is able to understand the principles of modern information technologies and use them to solve the tasks of professional activity.	GPC-7.1 Understands the principles of modern computer technology and telecommunications and is able to use them to solve professional problems;
		GPC-7.2 Uses modern special software and specialized databases to solve professional tasks and perform official duties;
		GPC-7.3 Has the skills to work on modern medical diagnostic and therapeutic equipment with software;
		GPC-7.4 Uses specialized databases to solve professional problems in the field of diagnostics and treatment of animals of various species;
		GPC-7.5 Uses geoinformation systems and software complexes when collecting and analyzing information related to the assessment of the spread of infectious diseases, epizootic situations, planning and evaluating the effectiveness of anti-epizootic measures.
PC -1	The ability to collect anamnesis of life and disease of animals to identify the causes of diseases and their nature.	PC -1.1 He is able to collect an anamnesis of the animal's life and reflect this in the relevant service documentation.
		PC-1.2 He is able to collect the anamnesis of the animal's disease and reflect it in the patient's medical history.
		PC-1.3 He is able to identify possible causes of the disease in an animal, factors predisposing to the disease and concomitant conditions affecting the nature of the course of the disease and use this information when making a diagnosis.
PC -3	Ability to develop animal research programs using special (instrumental) and laboratory methods.	PC-3.1 He is able to develop individual animal research programs, including the use of special (instrumental) and laboratory methods to detect deviations from the physiological norm of the state

		of a living organism, conduct differential diagnosis of the detected pathology or control the course of the disease and the effectiveness of the prescribed treatment.
		PC-3.2 Capable of developing mass comprehensive animal research programs (medical examination programs) of animals, taking into account their type and purpose, both general and special.
PC -4	The ability to conduct clinical studies of animals using special (instrumental) and laboratory methods to clarify the diagnosis.	PC-4.1 Able to conduct additional animal studies using laboratory methods to clarify the diagnosis.
		PC-4.2 Able to conduct additional animal studies using special (instrumental) methods to clarify the diagnosis.
PC -5	The ability to make a diagnosis based on the analysis of anamnesis data, general, special (instrumental) and laboratory research methods.	PC-5.1 He is able to diagnose patients of various types based on the analysis of anamnesis data, general, special (instrumental) and laboratory research methods.
		PC -5.2 He is able to predict the risks of diseases based on anamnestic data, the results of general, special (instrumental) and laboratory studies.
PC -6	The ability to develop a treatment plan for animals based on the established diagnosis and individual characteristics of animals.	PC-6.1 Able to develop a treatment plan for animals based on the established diagnosis and individual characteristics of animals.
		PC-6.2 He is able to develop recommendations on therapeutic and preventive manipulations to prevent diseases, the high probability of which was revealed during the study of the patient.
		PC-6.3 He is able to develop recommendations for carrying out preventive and curative measures based on the results of the examination of animals carried out as part of the medical examination.
PC -7	The ability to choose the necessary drugs of chemical and biological nature for the treatment of animals, taking into account their combined pharmacological effect on the body.	PC -7.1 He is able to choose medicines of chemical and biological nature necessary for the treatment of animals, guided by the principles of evidence-based medicine, taking into account their combined pharmacological effect on the body.
		PC-7.2 He is able to justify the prescription of a drug in a certain clinical

		case or the impossibility of using this drug in the situation under consideration.
		PC-7.3 He is able to calculate the dose, frequency and duration of the course of application of the drug to the patient, taking into account the form of release and the characteristics of the administration of the drug to the patient.
		PC-7.4 He is able to take into account drug interactions when prescribing a course of treatment to an animal already receiving medications and biologically active additives due to the presence of diseases identified earlier.
		PC-7.5 He is able to take into account economic, species and age characteristics, as well as the results of laboratory studies of the patient when choosing drugs for the treatment of the patient.
PC -8	Ability to choose methods of non-drug therapy, including physiotherapy methods for the treatment of animals.	PC-8.1 He is able to choose and justify his choice of methods of non-drug therapy, including physiotherapy methods, for the treatment of animals;
		PC-8.2 He is able to evaluate the effectiveness of the chosen method in the treatment of the patient and, if necessary, adjust the treatment method or change the chosen method to another one.
PC -9	The ability to carry out therapeutic, including physiotherapy procedures using special equipment in compliance with safety rules.	PC-9.1 Able to carry out therapeutic, including physiotherapy, procedures using special equipment in compliance with safety rules;
		PC -9.2 He is able to take into account the species, age and individual characteristics of animals undergoing treatment using special equipment, choose acceptable methods of fixing the patient during the procedure, the conditions of the procedures and their duration.
PC -10	The ability to determine the need for the use of surgical methods in the treatment of animals.	PC-10.1 Able to determine the need for the use of surgical methods in the treatment of animals;
		PC-10.2 Able to choose the optimal surgical method for the patient, taking into account the external conditions and the status of the patient's body, and if necessary, several manipulations - their order and time distribution;

		PC-10.3 He is able to take into account the risks and possible complications accompanying surgical interventions and take measures to prevent them.
PC -11	Ability to develop a surgical operation plan, including the choice of analgesia method	PC-11.1 Able to develop a surgical operation plan;
		PC-11.2 He is able to choose and justify the optimal variant of anesthesia of the patient during surgery and in the postoperative period.
PC -13	Ability to develop recommendations for special feeding of sick animals for therapeutic purposes.	PC-13.1 He is able to justify the appointment of special feeding to an animal for therapeutic purposes in various diseases;
		PC-13.2 He is able to recommend the approximate composition of therapeutic diets, the desired ratio of nutrients, the presence of special additives and components that enhance the therapeutic effect of the diet;
		PC-13.3 He is able to use special programs and databases for the selection of industrial therapeutic diets and dietary supplements, as well as for the compilation of individual therapeutic diets for animals of various species.
PC -14	The ability to conduct repeated examinations and studies of animals to assess the effectiveness and safety of the prescribed treatment and adjust the treatment plan of animals (if necessary) based on the results of the evaluation of the effectiveness of treatment.	PC-14.1 He is able to develop a plan of repeated studies necessary and sufficient to assess the predicted changes in the patient's health.
		PC-14.2 Able to conduct a repeated clinical examination, taking into account the specifics of diseases previously diagnosed in the patient.
		PC-14.3 Able to carry out the necessary repeated instrumental and laboratory tests.
		PC-14.4 He is able to analyze the identified changes, evaluate the effectiveness of the treatment and, if necessary, correct the prescribed course of treatment.
PC -18	The ability to draw up a plan for the medical examination of animals, taking into account their types and purpose, to conduct medical examinations, to develop recommendations	PC-18.1 He is able to make a plan for the medical examination of animals, general or specialized, taking into account their types and purpose
		PC-18.2 He is able to organize and conduct medical examination according to

	for carrying out preventive and curative measures based on the results of the examination of animals conducted as part of the medical examination	the drawn up plan
		PC-18.3 He is able, based on the results of medical examination, to give recommendations on the implementation of therapeutic and preventive and curative measures aimed at improving the health of a group of animals
PC -19	The ability to perform post-mortem diagnostic examination of animals in order to establish pathological processes, diseases, causes of death.	PC-19.1 Able to conduct a general examination of animal corpses before autopsy.
		PC-19.2 He is capable of performing autopsy of animal corpses using special tools and compliance with safety requirements.
		PC -19.3 He is able to establish the cause of death and a pathoanatomic diagnosis in accordance with generally accepted criteria and classifications, lists of animal diseases.
		PC-19.4 He is able to formalize the results of a postmortem diagnostic examination of an animal in the autopsy protocol.
PC -24	Ability and willingness to promote veterinary knowledge, including in the field of prevention of animal diseases.	PC-24.1 He is able to set goals in the field of veterinary knowledge promotion, plan the strategy and tactics of upcoming events.
		PC-24.2 He is able to use computer and telecommunication facilities for the preparation and demonstration of materials used in the process of promoting veterinary knowledge.
		PC-24.3 He is able to conduct conversations, lectures, seminars for employees of the organization in order to explain the principles of work on the prevention of animal diseases.

3. COURSE IN HIGHER EDUCATION

The discipline "**Cardiology**" belongs to the part formed by the participants of educational relations of the block B1 of the Educational Program of Higher Education.

As part of the Educational Program of Higher Education, students also master other disciplines and /or practices that contribute to achieving the planned results of mastering the discipline "**Cardiology**".

Table 3.1. List of Higher Education Program components disciplines that contribute to expected learning outcomes

Competence code	**Competence**	**Previous Disciplines (Modules)**	**Subsequent Disciplines (Modules)**
GPC-2	The ability to interpret and evaluate in professional activity the influence of natural, socio-economic, genetic and economic factors on the physiological state of the animal organism.	Biology with the basics of ecology Veterinary genetics Veterinary microbiology and mycology Virology and biotechnology Physiology and ethology of animals Breeding with the basics of private animal husbandry Animal health and welfare Pathological physiology Veterinary Radiobiology Pathological anatomy Instrumental diagnostic methods Toxicology Obstetrics, gynecology and andrology Internal non-infectious diseases General surgery Private Veterinary surgery Parasitology and invasive diseases Epizootology and infectious diseases Forensic veterinary examination and autopsy of animals Immunology General and veterinary ecology Veterinary sanitation	Endocrinology Nephrology Veterinary Ophthalmology Animal Dentistry

		Forage plants Zoopsychology Animal Health Diseases of horses Diseases of productive animals Diseases of small pets Diseases of small pets Bee diseases and entomophages Fish pathology and aquaculture Diseases of exotic animals Anesthesiology, intensive care and intensive care Dermatology	
GPC -4	The ability to use methods of solving problems using modern equipment in the development of new technologies in professional activity and to use modern professional methodology for conducting experimental research and interpreting their results.	Inorganic and analytical chemistry Organic Chemistry Biological physics Computer science Physical and colloidal chemistry Cytology, histology and embryology Biological chemistry Veterinary microbiology and mycology Virology and biotechnology Physiology and ethology of animals Breeding with the basics of private animal husbandry Pathological physiology Veterinary Radiobiology Clinical diagnosis Pathological anatomy Operative surgery with topographic anatomy Instrumental diagnostic methods	Endocrinology Nephrology Reconstructive and reconstructive surgery Veterinary Ophthalmology Animal Dentistry

		Toxicology Obstetrics, gynecology and andrology Internal non-infectious diseases General surgery Private Veterinary surgery Parasitology and invasive diseases Epizootology and infectious diseases Mathematics Immunology Veterinary sanitation Technology of processing livestock products Medicinal and poisonous plants Forage plants Fundamentals of intellectual work Personality psychology and professional self-determination Clinical laboratory diagnostics Laboratory diagnostics of infectious and invasive diseases Diseases of horses Diseases of productive animals Diseases of small pets Diseases of small pets Bee diseases and entomophages Fish pathology and aquaculture Diseases of exotic animals Anesthesiology, intensive care and intensive care Dermatology	
GPC -5	The ability to draw up	Veterinary genetics	Endocrinology

	special documentation, analyze the results of professional activity and submit accounting documents using specialized databases.	Computer science Breeding with the basics of private animal husbandry Clinical diagnosis Pathological anatomy Operative surgery with topographic anatomy Instrumental diagnostic methods Obstetrics, gynecology and andrology Internal non-infectious diseases Parasitology and invasive diseases Epizootology and infectious diseases Veterinary and sanitary examination Organization of veterinary business Forensic veterinary examination and autopsy of animals Veterinary deontology Economics and organization of agricultural production Clinical laboratory diagnostics Laboratory diagnostics of infectious and invasive diseases Organization of state veterinary supervision Veterinary and industrial laboratories with the basics of design Anesthesiology, intensive care and intensive care Dermatology	Nephrology
GPC -7	He is able to understand the principles of modern information	Computer science Instrumental diagnostic methods Organization of	Endocrinology Nephrology Reconstructive and reconstructive

	technologies and use them to solve the tasks of professional activity.	veterinary business Mathematics Fundamentals of intellectual work Clinical laboratory diagnostics Laboratory diagnostics of infectious and invasive diseases Veterinary and industrial laboratories with the basics of design Anesthesiology, intensive care and intensive care Dermatology	surgery
PC -1	The ability to collect anamnesis of life and disease of animals to identify the causes of diseases and their nature.	Veterinary genetics Physiology and ethology of animals Breeding with the basics of private animal husbandry Animal health and welfare Feeding animals with the basics of feed production Clinical diagnosis Toxicology Obstetrics, gynecology and andrology Internal non-infectious diseases General surgery Private Veterinary surgery Parasitology and invasive diseases Epizootology and infectious diseases Fundamentals of rhetoric and communication Veterinary deontology Zoopsychology Animal Health Personality	Endocrinology Nephrology Reconstructive and reconstructive surgery Veterinary Ophthalmology Animal Dentistry

		psychology and professional self-determination Diseases of horses Diseases of productive animals Diseases of small pets Diseases of small pets Diseases of exotic animals Anesthesiology, intensive care and intensive care Dermatology	
PC -3	Ability to develop animal research programs using special (instrumental) and laboratory methods.	Animal Anatomy Organic Chemistry Biological physics Physical and colloidal chemistry Biological chemistry Veterinary microbiology and mycology Virology and biotechnology Physiology and ethology of animals Pathological physiology Clinical diagnosis Pathological anatomy Instrumental diagnostic methods Toxicology Obstetrics, gynecology and andrology Internal non-infectious diseases General surgery Private Veterinary surgery Parasitology and invasive diseases Epizootology and infectious diseases Immunology Veterinary deontology Clinical laboratory	Endocrinology Nephrology Reconstructive and reconstructive surgery Veterinary Ophthalmology Animal Dentistry

		diagnostics Laboratory diagnostics of infectious and invasive diseases Veterinary and industrial laboratories with the basics of design Diseases of horses Diseases of productive animals Diseases of small pets Diseases of small pets Bee diseases and entomophages Fish pathology and aquaculture Diseases of exotic animals Anesthesiology, intensive care and intensive care Dermatology	
PC -4	The ability to conduct clinical studies of animals using special (instrumental) and laboratory methods to clarify the diagnosis.	Animal anatomy Biological physics Cytology, histology and embryology Biological chemistry Veterinary microbiology and mycology Virology and biotechnology Physiology and ethology of animals Pathological physiology Clinical diagnosis Pathological anatomy Instrumental diagnostic methods Obstetrics, gynecology and andrology Internal non-infectious diseases General surgery Private Veterinary surgery	Endocrinology Nephrology Veterinary Ophthalmology Animal Dentistry

		Parasitology and invasive diseases Epizootology and infectious diseases Clinical laboratory diagnostics Laboratory diagnostics of infectious and invasive diseases Diseases of horses Diseases of productive animals Diseases of small pets Diseases of small pets Diseases of exotic animals Anesthesiology, intensive care and intensive care Dermatology	
PC -5	The ability to make a diagnosis based on the analysis of anamnesis data, general, special (instrumental) and laboratory research methods.	Veterinary genetics Cytology, histology and embryology Physiology and ethology of animals Breeding with the basics of private animal husbandry Feeding animals with the basics of feed production Pathological physiology Clinical diagnosis Pathological anatomy Toxicology Obstetrics, gynecology and andrology Internal non-infectious diseases General surgery Private Veterinary surgery Parasitology and invasive diseases Epizootology and infectious diseases Forensic veterinary	Endocrinology Nephrology Reconstructive and reconstructive surgery Veterinary Ophthalmology Animal Dentistry

		examination and autopsy of animals Zoopsychology Diseases of horses Diseases of productive animals Diseases of small pets Diseases of small pets Bee diseases and entomophages Fish pathology and aquaculture Diseases of exotic animals Anesthesiology, intensive care and intensive care Dermatology	
PC -6	The ability to develop a treatment plan for animals based on the established diagnosis and individual characteristics of animals.	Veterinary genetics Veterinary microbiology and mycology Virology and biotechnology Pathological physiology Veterinary Pharmacology Toxicology Obstetrics, gynecology and andrology Internal non-infectious diseases General surgery Private Veterinary surgery Parasitology and invasive diseases Epizootology and infectious diseases Mathematics Immunology Zoopsychology Diseases of horses Diseases of productive animals Diseases of small pets Diseases of small pets	Endocrinology Nephrology Reconstructive and reconstructive surgery Veterinary Ophthalmology Animal Dentistry

		Bee diseases and entomophages Fish pathology and aquaculture Diseases of exotic animals Anesthesiology, intensive care and intensive care Dermatology	
PC -7	The ability to choose the necessary drugs of chemical and biological nature for the treatment of animals, taking into account their combined pharmacological effect on the body.	Inorganic and analytical chemistry Organic Chemistry Physical and colloidal chemistry Biological chemistry Veterinary microbiology and mycology Virology and biotechnology Pathological physiology Veterinary Pharmacology Toxicology Obstetrics, gynecology and andrology Internal non-infectious diseases General surgery Private Veterinary surgery Parasitology and invasive diseases Epizootology and infectious diseases Medicinal and poisonous plants Diseases of horses Diseases of productive animals Diseases of small pets Diseases of small pets Bee diseases and entomophages Fish pathology and aquaculture	Endocrinology Nephrology Veterinary Ophthalmology Animal Dentistry

		Diseases of exotic animals Anesthesiology, intensive care and intensive care Dermatology	
PC -8	Ability to choose methods of non-drug therapy, including physiotherapy methods for the treatment of animals.	Veterinary microbiology and mycology Virology and biotechnology Physiology and ethology of animals Feeding animals with the basics of feed production Pathological physiology Veterinary Radiobiology Internal non-infectious diseases General surgery Private Veterinary surgery Diseases of horses Diseases of productive animals Diseases of small pets Diseases of small pets Diseases of exotic animals Anesthesiology, intensive care and intensive care Dermatology	Endocrinology Nephrology Reconstructive and reconstructive surgery Veterinary Ophthalmology Animal Dentistry
PC -9	The ability to carry out therapeutic, including physiotherapy procedures using special equipment in compliance with safety rules.	Animal anatomy Life safety Veterinary microbiology and mycology Virology and biotechnology Physiology and ethology of animals Pathological physiology Veterinary	Endocrinology Nephrology Reconstructive and reconstructive surgery Veterinary Ophthalmology Animal Dentistry

		Radiobiology General surgery Private Veterinary surgery Diseases of horses Diseases of productive animals Diseases of small pets Diseases of small pets Diseases of exotic animals Anesthesiology, intensive care and intensive care Dermatology	
PC -10	The ability to determine the need for the use of surgical methods in the treatment of animals.	Veterinary genetics Cytology, histology and embryology Veterinary microbiology and mycology Physiology and ethology of animals Pathological physiology Clinical diagnosis Pathological anatomy Obstetrics, gynecology and andrology General surgery Private Veterinary surgery Diseases of horses Diseases of productive animals Diseases of small pets Diseases of small pets Diseases of exotic animals Dermatology	Endocrinology Nephrology Reconstructive and reconstructive surgery Veterinary Ophthalmology Animal Dentistry
PC -11	Ability to develop a surgical operation plan, including the choice of analgesia method	Animal anatomy Veterinary microbiology and mycology Physiology and ethology of animals Pathological physiology	Endocrinology Nephrology Reconstructive and reconstructive surgery

		Veterinary Pharmacology Pathological anatomy Operative surgery with topographic anatomy Obstetrics, gynecology and andrology General surgery Private Veterinary surgery Anesthesiology, intensive care and intensive care Dermatology	
PC -13	Ability to develop recommendations for special feeding of sick animals for therapeutic purposes.	Physiology and ethology of animals Feeding animals with the basics of feed production Pathological physiology Internal non-infectious diseases General surgery Private Veterinary surgery Medicinal and poisonous plants Forage plants Anesthesiology, intensive care and intensive care Dermatology	Endocrinology Nephrology
PC -14	The ability to conduct repeated examinations and studies of animals to assess the effectiveness and safety of the prescribed treatment and adjust the treatment plan of animals (if necessary) based on the results of the evaluation of the effectiveness of treatment.	Cytology, histology and embryology Physiology and ethology of animals Pathological physiology Veterinary Pharmacology Clinical diagnosis Pathological anatomy Instrumental diagnostic methods Toxicology Obstetrics, gynecology and andrology	Endocrinology Nephrology Reconstructive and reconstructive surgery Veterinary Ophthalmology Animal Dentistry

		Internal non-infectious diseases General surgery Private Veterinary surgery Parasitology and invasive diseases Epizootology and infectious diseases Clinical laboratory diagnostics Diseases of horses Diseases of productive animals Diseases of small pets Diseases of small pets Diseases of exotic animals Anesthesiology, intensive care and intensive care Dermatology	
PC -18	The ability to draw up a plan for the medical examination of animals, taking into account their types and purpose, to conduct medical examinations, to develop recommendations for carrying out preventive and curative measures based on the results of the examination of animals conducted as part of the medical examination	Veterinary genetics Physiology and ethology of animals Breeding with the basics of private animal husbandry Animal health and welfare Feeding animals with the basics of feed production Pathological physiology Veterinary Pharmacology Clinical diagnosis Pathological anatomy Instrumental diagnostic methods Toxicology Obstetrics, gynecology and andrology Internal non-infectious diseases General surgery Private Veterinary	Endocrinology Nephrology Veterinary Ophthalmology Animal Dentistry

		surgery Animal Health Clinical laboratory diagnostics Diseases of horses Diseases of productive animals Diseases of small pets Diseases of small pets Diseases of exotic animals Dermatology	
PC -19	The ability to perform post-mortem diagnostic examination of animals in order to establish pathological processes, diseases, causes of death.	Animal anatomy Cytology, histology and embryology Life safety Pathological anatomy Toxicology Obstetrics, gynecology and andrology Internal non-infectious diseases General surgery Private Veterinary surgery Parasitology and invasive diseases Epizootology and infectious diseases Veterinary and sanitary examination Forensic veterinary examination and autopsy of animals Clinical laboratory diagnostics Laboratory diagnostics of infectious and invasive diseases Diseases of horses Diseases of productive animals Diseases of small pets Bee diseases and entomophages Fish pathology and aquaculture Diseases of exotic	Endocrinology Nephrology Veterinary Ophthalmology Animal Dentistry

		animals Dermatology	
PC -24	Ability and willingness to promote veterinary knowledge, including in the field of prevention of animal diseases.	Physiology and ethology of animals Breeding with the basics of private animal husbandry Animal health and welfare Feeding animals with the basics of feed production Pathological physiology Pathological anatomy Toxicology Obstetrics, gynecology and andrology Internal non-infectious diseases General surgery Private Veterinary surgery Parasitology and invasive diseases Epizootology and infectious diseases Fundamentals of rhetoric and communication Introduction to the specialty General and veterinary ecology Veterinary sanitation Veterinary deontology Economics and organization of agricultural production Medicinal and poisonous plants Forage plants Zoopsychology Animal Health Diseases of horses Diseases of productive animals Diseases of small pets	Endocrinology Nephrology Reconstructive and reconstructive surgery Veterinary Ophthalmology Animal Dentistry Foreign language for special purposes Russian for special purposes Foreign language. Translation of special texts Russian language. Translation of special texts Foreign language. Professional communications Russian language. Professional communications

		Diseases of small pets Bee diseases and entomophages Fish pathology and aquaculture Diseases of exotic animals Dermatology	

4. COURSE WORKLOAD AND TRAINING ACTIVITIES

Course workload of the discipline "**Cardiology** is 3 credits.

*Table 4.1. Types of academic activities during the period of the HE program mastering for **full-time** study*

Types of academic activities		**HOURS**	**Semesters**			
			9	**-**	**-**	**-**
Contact academic hours		54	54	-	-	-
including						
Lectures		18	18	-	-	-
Lab work		36	36	-	-	-
Seminars (workshops/tutorials)		-	-	-	-	-
Self-study		38	38	-	-	-
Evaluation and assessment (exam/pass/fail grading)		16	16	-	-	-
Course workload	Academic hour	**108**	**108**	**-**	**-**	**-**
	Credit unit	**3**	**3**	**-**	**-**	**-**

*Table 4.2. Types of academic activities during the period of the HE program mastering for **part-time** study*

Types of academic activities		**HOURS**	**Semesters**			
			A	**-**	**-**	**-**
Contact academic hours		36	36	-	-	-
including						
Lectures		-	-	-	-	-
Lab work		36	36	-	-	-
Seminars (workshops/tutorials)		-	-	-	-	-
Self-study		62	62	-	-	-
Evaluation and assessment (exam/pass/fail grading)		10	10	-	-	-
Course workload	Academic hour	**108**	**108**	**-**	**-**	**-**
	Credit unit	**3**	**3**	**-**	**-**	**-**

5. CONTENT OF THE DISCIPLINE

Table 5.1 Content of the discipline (module) by type of academic work

Name of the discipline section	Content of the section (topics)	Types of academic activities
Section 1. Introduction to Cardiology	Topic 1.1 Blood supply to the heart, research of the cardiovascular system.	Lectures, Lab work.
	Topic 1.2 Examination, auscultation, percussion, palpation, X-ray examinations.	Lectures, Lab work.
Section 2. Diagnosis of diseases of the cardiovascular system	Topic 2.1. Acute heart failure, ECG recording technique.	Lectures, Lab work.
	Topic 2.2. Echocardiography, ultrasound cardiography, phonocardiography.	Lectures, Lab work.

6. CLASSROOM INFRASTRUCTURE AND TECHNOLOGY SUPPORT REQUIREMENTS

Table 6.1. Material and technical support of the discipline

Classroom for Academic Activity Type	***Equipping the classroom***	**Specialized educational/laboratory equipment, software and materials for the development of the discipline** (if necessary)
Lecture	An auditorium for conducting lecture-type classes, equipped with a set of specialized furniture; a board (screen) and technical means of multimedia presentations.	-
Laboratory	An auditorium for laboratory work, individual consultations, routine monitoring and interim certification, equipped with a set of specialized furniture and equipment.	-

Self-studies	An auditorium for independent work of students (can be used for seminars and consultations), equipped with a set of specialized furniture and computers with access to an electronic information and educational environment.	-

7. RECOMMENDED SOURCES FOR COURSE STUDIES

Main reading:

1. Cardiology of cats / E. Kot, K. M. Mers, K.A. McDonald, M.M. Sleeper; translation and scientific editorial by A.V. Kamenev, P.A. Kuznetsov. - Moscow : Scientific Library, 2018. - 578 p. : ill. - ISBN 978-5-6040896-5-1
2. Clinical diagnostics of internal non-infectious animal diseases / B.V. Usha, I.M. Belyakov, R.P. Pushkarev. - Electronic text data. - St. Petersburg : Quadro, 2020. - 487 p. : ill. - (Textbooks and manuals for higher educational institutions). - ISBN 978-5-906371-03-4

Additional Reading:

3. Infectious diseases of animals : a textbook for universities / Edited by A.A.Kudryashov, A.V.Svyatkovsky. - St. Petersburg: Lan, 2007. - 608 p. : ill. - (Veterinary medicine). - ISBN 978-5-8114-0710-1
4. Pathological physiology of animals: textbook / S.I. Lyutinsky. - 2nd ed., ispr. and add. - M. : KolosS, 2005. - 496 p. : ill. - (Textbooks and manuals for students of higher educational institutions). - ISBN 5-9532-0017'S

Resources of the Internet information and telecommunication network:

1. Electronic library system of RUDN and third-party Electronic library systems to which university students have access on the basis of concluded contracts:
- Electronic library system of RUDN - ELS RUDN http://lib.rudn.ru/MegaPro/Web
- ELS "University Library online"http://www.biblioclub.ru
- ELS Yurayt http://www.biblio-online.ru
- ELS "Student Consultant"www.studentlibrary.ru
- ELS "Lan"http://eZlanbook.com/
- ELS "Trinity Bridge"http://www.trmost.com/

2. Databases and search engines:
- electronic fund of legal and regulatory and technical documentation http://docs.cntd.ru/
- search engine Yandex https://www.yandex.ru/
- search engine Google https://www.google.ru/
- abstract database SCOPUS http://www.elsevierscience.ru/products/scopus/

Educational and methodological materials for independent work of students during the development of the discipline/ module*:

1. A course of lectures on the discipline "**Cardiology**".
2. Laboratory workshop on the discipline "**Cardiology**".

* - All educational and methodological materials for independent work of students are placed in accordance with the current procedure on the discipline page in the **Telecommunication educational and Information System!**

8. MID-TERM ASSESSMENT

Evaluation materials and a point-rating system* for assessing the level of competence formation (part of competencies) based on the results of mastering the discipline "**Cardiology**" are presented in the Appendix to this Work Program of the discipline.

* - Assessment Materials and a Point Rating System are formed based on the requirements of the relevant local regulatory act of the RUDN.

DEVELOPER:

Professor of the Department of Veterinary Medicine		Vatnikov Yu.A.
Position, Basic curriculum	Signature	Full name.

HEAD OF THE DEPARTMENT:

Department of Veterinary Medicine		Vatnikov Yu.A.
Name Basic Curriculum	Signature	Full name.

HEAD OF THE HIGHER EDUCATION PROGRAM:

Director of the Department of Veterinary Medicine		Vatnikov Yu.A.
Position, Basic curriculum	Signature	Full name