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**Federal State Autonomous Educational Institution for Higher Education PEOPLES'
FRIENDSHIP UNIVERSITY OF RUSSIA
Agrarian and Technological Institute**

WORKING COURSE SYLLABUS

Toxicology

Recommended by the Methodological Council for the Education Field:

36.05.01 Veterinary medicine

1. GOALS AND OBJECTIVES OF THE DISCIPLINE

The aim of the mastering the discipline "**Toxicology**" is to study the effect of toxic substances of anthropogenic and natural origin on the organism of agricultural, wild and game animals, fish and bees, on their productivity, reproductive function and sanitary quality of livestock products.

2. REQUIREMENTS FOR THE RESULTS OF MASTERING THE DISCIPLINE

The development of the discipline "**Toxicology**" 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 He has knowledge of the influence of natural, socio-economic, genetic and economic factors on the animal organism.
		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 organism and the development of diseases.
		GPC-2.3 Possesses methods of preventive and therapeutic correction of the effects of adverse environmental factors that can cause deterioration of animal health.
GPC-3	The ability to carry out and improve professional activities in accordance with regulatory legal acts in the field of agro-industrial complex.	GPC-3.1 He knows modern legal norms, both state and international, regulating activities in the field of veterinary medicine, veterinary and sanitary expertise and agro-industrial complex.
		GPC-3.2 He has the skills to update legal information, including in the field of agro-industrial complex.
		GPC-3.3 Carries out activities in accordance with regulatory legal acts in the field of agro-industrial complex, as well as in the field of veterinary medicine and veterinary and sanitary expertise.
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	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 Owns methods of solving problems using modern equipment.

	methodology for conducting experimental research and interpreting their results.	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-6	The ability to analyze, identify and assess the danger of the risk of the occurrence and spread of diseases.	GPC-6.1 Has knowledge in the field of etiology and pathogenesis of animal diseases of different species.
		GPC-6.2 Has the skills to diagnose non-infectious, infectious and invasive diseases, identify pathogens of infectious and invasive diseases in animals.
		GPC-6.3 Knows the patterns of occurrence and spread of diseases in animal populations, factors predisposing to illnesses and causes of possible complications.
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 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 standards of the state of a living organism, to conduct differential diagnosis of the detected pathology or to control the course of the disease and the effectiveness of the prescribed treatment.
		PC-3.2 He is able to develop mass comprehensive animal research programs (medical examination programs) of animals, taking into account their type and purpose, both general and special.
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 different 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.	<p>PC-6.1 He is able to develop a treatment plan for animals based on the established diagnosis and individual characteristics of the animals.</p> <p>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.</p> <p>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.</p>
PC -7	The ability to choose the necessary medicaments of chemical and biological nature for the treatment of animals, taking into account their combined pharmacological effect on the organism.	<p>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</p> <p>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</p> <p>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</p> <p>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</p> <p>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</p>
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	<p>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</p> <p>PC-14.2 He is able to conduct a repeated clinical examination, taking into account the</p>

	necessary) based on the results of the evaluation of the effectiveness of treatment	<p>specifics of diseases previously diagnosed in the patient</p> <p>PC-14.3 He is able to carry out the necessary repeated instrumental and laboratory tests</p> <p>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.</p>
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	<p>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</p> <p>PC-18.2 He is able to organize and conduct medical examination according to the drawn up plan</p> <p>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</p>
PC -19	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	<p>PC-19.1 He is able to conduct a general examination of animal corpses before autopsy</p> <p>PC-19.2 He is able to perform autopsy of animal corpses using special tools and compliance with safety requirements</p> <p>PC-19.3 He is able to establish the cause of death and pathoanatomic diagnosis in accordance with generally accepted criteria and classifications, lists of animal diseases</p> <p>PC -19.4 He is able to formalize the results of a postmortem diagnostic examination of an animal in the autopsy protocol</p>
PC -23	Ability to analyze the effectiveness of measures for the prevention of animal diseases in order to improve them	<p>PC -23.1 He is able to collect and analyze information, including veterinary statistics data, necessary to assess the effectiveness of preventive antiepidemiological measures, prevention of non-infectious animal diseases, veterinary and sanitary measures</p> <p>PC-23.2 He is able to evaluate the effectiveness of preventive measures and methods of their implementation, including using special software</p> <p>PC-23.3 He is able to make suggestions on the correction of measures for the prevention of animal diseases on the basis of the analysis carried out</p>

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 "**Toxicology**" refers to the mandatory part of 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 "**Toxicology**".

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 Forage plants	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 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 Cardiology Endocrinology Nephrology Veterinary Ophthalmology Animal Dentistry
GPC-3	The ability to carry out and improve professional activities in accordance with regulatory legal acts in the field of agro-industrial complex.	Jurisprudence Life safety Breeding with the basics of private animal husbandry	Veterinary Pharmacology Toxicology Parasitology and invasive diseases Epizootology and infectious diseases Organization of veterinary business General and veterinary ecology Veterinary sanitation Technology of processing livestock products Veterinary deontology Economics and

			<p>organization of agricultural production Laboratory diagnostics of infectious and invasive diseases Organization of state veterinary supervision Veterinary and industrial laboratories with the basics of design Career Management Fundamentals of social and legal knowledge</p>
GPC-4	<p>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.</p>	<p>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 Medicinal and poisonous plants Forage plants</p>	<p>Veterinary Radiobiology Clinical diagnosis Pathological anatomy Operative surgery with topographic 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 Mathematics Immunology Veterinary sanitation Technology of processing livestock products Fundamentals of intellectual work Personality psychology and professional self-determination Clinical laboratory diagnostics Laboratory diagnostics</p>

			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 Cardiology Endocrinology Nephrology Reconstructive and reconstructive surgery Veterinary Ophthalmology Animal Dentistry
GPC-6	The ability to analyze, identify and assess the risk of the risk of the occurrence and spread of diseases.	Biology with the basics of ecology Life safety Veterinary microbiology and mycology Virology and biotechnology Animal health and welfare Feeding animals with the basics of feed production Introduction to the specialty Medicinal and poisonous plants Forage plants	Veterinary Radiobiology 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 Veterinary and sanitary examination Organization of veterinary business Forensic veterinary

			<p>examination and autopsy of animals General and veterinary ecology Veterinary sanitation Technology of processing livestock products Animal Health Clinical laboratory diagnostics Laboratory diagnostics of infectious and invasive diseases Organization of state veterinary supervision 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 Veterinary Ophthalmology Animal Dentistry</p>
PC -1	The ability to collect anamnesis of life and disease of animals to identify the causes of diseases and their nature	<p>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 Fundamentals of rhetoric and communication</p>	<p>Clinical diagnosis Toxicology Obstetrics, gynecology and andrology Internal non-infectious diseases General surgery Private Veterinary surgery Parasitology and invasive diseases Epizootology and infectious diseases Veterinary deontology Zoopsychology</p>

			<p>Animal Health Personality 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 Cardiology Endocrinology Nephrology Reconstructive and reconstructive surgery Veterinary Ophthalmology Animal Dentistry</p>
PC -3	Ability to develop animal research programs using special (instrumental) and laboratory methods	<p>Cytology, histology and embryology Life safety</p>	<p>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</p>

			<p>animals Diseases of small pets Bee diseases and entomophages Fish pathology and aquaculture Diseases of exotic animals Dermatology Cardiology Endocrinology Nephrology Veterinary Ophthalmology Animal Dentistry</p>
PC -5	The ability to make a diagnosis based on the analysis of anamnesis data, general, special (instrumental) and laboratory research methods	<p>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</p>	<p>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 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</p>

			Dermatology Cardiology Endocrinology Nephrology Reconstructive and reconstructive surgery Veterinary Ophthalmology Animal Dentistry
PC-6	Ability to develop an animal treatment plan 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 Bee diseases and entomophages Fish pathology and aquaculture Diseases of exotic animals Anesthesiology, intensive care and intensive care Dermatology Cardiology Endocrinology Nephrology Reconstructive and reconstructive surgery Veterinary Ophthalmology

			Animal Dentistry
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 Diseases of exotic animals Anesthesiology, intensive care and intensive care Dermatology Cardiology Endocrinology Nephrology Veterinary Ophthalmology Animal Dentistry

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 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 Cardiology Endocrinology Nephrology Reconstructive and reconstructive surgery Veterinary Ophthalmology Animal Dentistry
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	Veterinary genetics Physiology and ethology of animals Breeding with the basics of private animal husbandry Animal health and welfare Feeding animals with	Veterinary Pharmacology Clinical diagnosis Pathological anatomy Instrumental diagnostic methods Toxicology Obstetrics, gynecology and andrology

	<p>carrying out preventive and curative measures based on the results of the examination of animals conducted as part of the medical examination</p>	<p>the basics of feed production Pathological physiology</p>	<p>Internal non-infectious diseases General surgery Private Veterinary 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 Cardiology Endocrinology Nephrology Veterinary Ophthalmology Animal Dentistry</p>
PC -19	<p>Ability to perform post-mortem diagnostic examination of animals in order to establish pathological processes, diseases, causes of death</p>	<p>Animal anatomy Cytology, histology and embryology Life safety</p>	<p>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</p>

			Diseases of small pets Bee diseases and entomophages Fish pathology and aquaculture Diseases of exotic animals Dermatology Cardiology Endocrinology Nephrology Veterinary Ophthalmology Animal Dentistry
PC -23	Ability to analyze the effectiveness of measures for the prevention of animal diseases in order to improve them	Breeding with the basics of private animal husbandry	Animal health and welfare Toxicology Internal non-infectious diseases General surgery Private Veterinary surgery Parasitology and invasive diseases Epizootology and infectious diseases Veterinary and sanitary examination Organization of veterinary business Forensic veterinary examination and autopsy of animals Fundamentals of Economics and Management Veterinary sanitation Economics and organization of agricultural production Animal Health Organization of state veterinary supervision Bee diseases and entomophages Fish pathology and aquaculture

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 Feeding animals with the basics of feed production Pathological physiology	<p>Animal health and welfare Toxicology Internal non-infectious diseases General surgery Private Veterinary surgery Parasitology and invasive diseases Epizootology and infectious diseases Veterinary and sanitary examination Organization of veterinary business Forensic veterinary examination and autopsy of animals Fundamentals of Economics and Management Veterinary sanitation Economics and organization of agricultural production Animal Health Organization of state veterinary supervision Bee diseases and entomophages Fish pathology and aquaculture Animal health and welfare Pathological anatomy Toxicology Obstetrics, gynecology and andrology Internal non-infectious diseases General surgery Private Veterinary surgery Parasitology and invasive diseases Epizootology and infectious diseases</p>
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		<p> 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 Diseases of small pets Bee diseases and entomophages Fish pathology and aquaculture Diseases of exotic animals Dermatology Cardiology 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. </p>
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			Professional communications Russian language. Professional communications
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4. COURSE WORKLOAD AND TRAINING ACTIVITIES

Course workload of the discipline "**Toxicology**" 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				
			6	-	-	-	
Contact academic hours		54	54	-	-	-	
including							
Lectures		18	18	-	-	-	
Lab work		36	36	-	-	-	
Seminars (workshops/tutorials)		-	-	-	-	-	
Self-study		44	44	-	-	-	
Evaluation and assessment (exam/pass/fail grading)		10	10	-	-	-	
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				
			7	-	-	-	
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	-	-	-

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. General toxicology.	Topic 1: General toxicology	Lectures, Lab work.
Section 2. Private toxicology.	Topic 2.1 Chemical toxicoses.	Lectures, Lab work.
	Topic 2.2 Feed toxicosis.	Lectures, Lab work.
	Topic 2.3 Phytotoxicoses.	Lectures, Lab work.
	Topic 2.4 Mycotoxicoses.	Lectures, Lab work.
	Topic 2.5 Toxicosis with poisons of animal origin.	Lectures, Lab work.
	Topic 2.6 Poisoning by toxic substances.	Lectures, Lab work.
	Topic 2.7 Poisoning Polychlorinated biphenyls and Polychlorinated biphenyls.	Lectures, Lab work.

6. CLASSROOM INFRASTRUCTURE AND TECHNOLOGY SUPPORT REQUIREMENTS

Table 6.1. Material and technical support of the discipline

<i>Classroom for Academic Activity Type</i>	<i>Equipping the classroom</i>	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. Kharlitskaya E.V., Vatnikov Yu.A. Educational practice in pharmacology and toxicology. Educational and methodological recommendations M., "ZooVetKniga", 2013, pp.1-32.
2. Korolev B.A., Skosyrskikh L.N., Lieberman E.L. Workshop on Toxicology 2019.-384p. <https://e.lanbook.com/book/125440>
3. Izvekova T. V., Gushchin A. A., Kobeleva N. A. Fundamentals of toxicology 2022.- 152p. <https://e.lanbook.com/book/200405>

Additional Reading:

1. Zhulenko V.N., Rabinovich M.I., Talanov G.A., Veterinary toxicology. - M.: KolosS, 2012. – 384 p.
2. Korolev B. A. Practicum on toxicology [Text] : Textbook / B.A. Korolev, L.N. Skosyrskikh. - St. Petersburg : Lan, 2016. - 384 p.
3. Toxicological ecology : textbook / A.V. Miftakhutdinov. - St. Petersburg : Publishing House "Lan", 2018. - 308 p
4. Belyavsky V.N., Ushakov S.S. VETERINARY TOXICOLOGY. - Grodno: GGAU, 2010. - 24 p.
5. Gusynin I.A. Toxicology of poisonous plants – M. : Kolos, 2008. - 624 p.
6. Modern veterinary medicines / Nabiev F.G., Akhmadeev R.N., - 2nd ed., reprint ed. - St. Petersburg: Lan, 2011. - 816 p.
7. Roder J. Veterinary toxicology. - M.: Aquarium-Print, 2008. - 416 p.

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 "**Toxicology**".

2. Laboratory workshop on the discipline "**Toxicology**".

* - 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 "**Toxicology**" 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:

Associate Professor of the Department of Veterinary
Medicine

Position, Basic curriculum

Signature

Kharlitskaya E.V.

Full name.

HEAD OF THE DEPARTMENT:

Department of Veterinary Medicine

Name Basic Curriculum

Signature

Vatnikov Yu.A.

Full name.

HEAD OF THE HIGHER EDUCATION PROGRAM:

Director of the Department of Veterinary Medicine

Position, Basic curriculum

Signature

Vatnikov Yu.A.

Full name