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

WORKING COURSE SYLLABUS

Animal health and welfare

Recommended by the Methodological Council for the Education Field:

36.05.01 Veterinary medicine

1. GOALS AND OBJECTIVES OF THE DISCIPLINE

The aim of mastering the discipline "**Animal health and welfare**" is the formation of a set of competence for students to solve professional tasks to optimize the conditions of feeding, watering and keeping animals in order to prevent diseases and increase the productivity of animals; the influence of a complex of environmental factors on the natural resistance of the body and the productive qualities of farm animals.

2. REQUIREMENTS FOR THE RESULTS OF MASTERING THE DISCIPLINE

The development of the discipline "**Animal health and welfare**" 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 -6	The ability to analyze, identify and assess the risk 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 He knows the patterns of the occurrence and spread of diseases in animal populations, factors predisposing to diseases and the 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 the anamnesis of the animal's disease and reflect it in the

		<p>patient's medical history.</p> <p>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.</p>
PC -16	<p>Ability to organize organizational, technical, zootechnical and veterinary measures aimed at the prevention of non-communicable diseases in accordance with the plan for the prevention of non-communicable animal diseases</p>	<p>PC-16.1 He is able to assess the impact of animal housing and feeding conditions on their health as part of the implementation of action plans for the prevention of animal diseases</p> <p>PC-16.2 He is able to carry out veterinary quality control and procurement of animal feed in order to ensure their veterinary and sanitary safety as part of the implementation of action plans for the prevention of animal diseases</p> <p>PC-16.3 He is able to detect deviations from the plan of timing, types, quality of measures to prevent the occurrence of non-infectious animals</p> <p>PC-16.4 Take corrective measures to implement measures to prevent the occurrence of non-infectious animal diseases based on the results of control</p> <p>PC-16.5 Conduct conversations, lectures, seminars for employees of the organization in order to explain the principles of work on the prevention of animal diseases</p>
PC -18	<p>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>	<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 -20	<p>Ability to develop an annual plan of antiepzootic measures, a plan for the prevention of non-infectious animal diseases,</p>	<p>PC-20.1 Able to conduct epizootological examination of the organization, territory.</p> <p>PC-20.2 He is able to develop an annual plan of antiepzootic and antiparasitic</p>

	a plan of veterinary and sanitary measures.	measures, a plan for the prevention of non-infectious animal diseases, a plan of veterinary and sanitary measures.
		PC-20.3 He is able to analyze the effectiveness of measures for the prevention of animal diseases in order to improve them.
PC -21	The ability to carry out inspections of the veterinary and sanitary condition and microclimate of livestock premises in accordance with the plan of antiepidemiological measures, the plan of prevention of non-infectious animal diseases, the plan of veterinary and sanitary measures	PC-21.1 He is able to detect deviations in the parameters of the microclimate in livestock premises from the normative
		PC-21.2 He is able to detect violations of the veterinary and sanitary condition of livestock premises, determine their cause and possible consequences
		PC-21.3 He is able to use the information obtained during the inspection of the veterinary and sanitary condition and microclimate of livestock premises for risk analysis of non-infectious, infectious and invasive diseases
PC -22	Ability to organize measures to protect the organization from the introduction of infectious and invasive diseases in accordance with the plan of antiepidemiological measures.	PC -22.1 He is able to assess the epidemiological state of an organization (territory), identify risks and possible causes of epidemiological foci, as well as factors affecting their spread in specific organizations, territories.
		PC-22.2 Able to choose and apply the most effective measures to protect the organization from the introduction of infectious and invasive diseases.
		PC-22.3 He is able to carry out operational control of the effectiveness of the activities carried out.
PC -23	The ability to analyze the effectiveness of measures for the prevention of animal diseases in order to improve them.	PC-23.1 He is capable of collecting and analyzing information, including veterinary statistics data, necessary to assess the effectiveness of preventive antiepidemiological measures, prevention of non-infectious animal diseases, veterinary and sanitary measures.
		PC-23.2 Able to evaluate the effectiveness of preventive measures and methods of their implementation, including using special software.
		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.

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 "**Animal health and welfare**" 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 "**Animal health and welfare**".

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	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 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 Cardiology Endocrinology Nephrology 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	Feeding animals with the basics of feed production Veterinary Radiobiology Clinical diagnosis Pathological anatomy Instrumental diagnostic methods Toxicology Obstetrics, gynecology and andrology Internal non-infectious diseases General surgery Private Veterinary

		<p> surgery Parasitology and invasive diseases Epizootology and infectious diseases Veterinary and sanitary examination Organization of veterinary business Forensic veterinary examination and autopsy of animals Introduction to the specialty General and veterinary ecology Veterinary sanitation Technology of processing livestock products Medicinal and poisonous plants Forage plants 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>
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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	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 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
PC -16	Ability to organize organizational, technical, zotechnical and veterinary measures	Veterinary genetics Life safety Physiology and ethology of animals	Feeding animals with the basics of feed production Obstetrics, gynecology

	aimed at the prevention of non-communicable diseases in accordance with the plan for the prevention of non-communicable animal diseases	Breeding with the basics of private animal husbandry	and andrology Internal non-infectious diseases General surgery Private Veterinary surgery Organization of veterinary business Fundamentals of Economics and Management 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 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 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	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

			<p>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 -20	<p>Ability to develop an annual plan of antiepidemiologic measures, a plan for the prevention of non-infectious animal diseases, a plan of veterinary and sanitary measures.</p>	<p>Veterinary microbiology and mycology</p>	<p>Feeding animals with the basics of feed production Internal non-infectious diseases General surgery Private Veterinary surgery Parasitology and invasive diseases Epidemiology and infectious diseases Organization of veterinary business Fundamentals of Economics and Management Veterinary sanitation Economics and organization of agricultural production Animal Health Bee diseases and entomophages Fish pathology and aquaculture</p>
PC -21	<p>The ability to carry out inspections of the</p>	<p>Veterinary microbiology and</p>	<p>Veterinary Radiobiology</p>

	veterinary and sanitary condition and microclimate of livestock premises in accordance with the plan of antiepizootic measures, the plan of prevention of non-infectious animal diseases, the plan of veterinary and sanitary measures	mycology Virology and biotechnology	Veterinary sanitation Animal Health
PC -22	Ability to organize measures to protect the organization from the introduction of infectious and invasive diseases in accordance with the plan of antiepizootic measures.	Life safety Veterinary microbiology and mycology Virology and biotechnology	Veterinary Pharmacology Private Veterinary surgery Parasitology and invasive diseases Epizootology and infectious diseases Organization of veterinary business General and veterinary ecology Veterinary sanitation Technology of processing livestock products Animal Health Laboratory diagnostics of infectious and invasive diseases Organization of state veterinary supervision Bee diseases and entomophages Fish pathology and aquaculture
PC -23	The 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	Toxicology Internal non-infectious diseases General surgery Private Veterinary surgery Parasitology and invasive diseases Epizootology and infectious diseases Veterinary and sanitary

			<p>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</p>
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	<p>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</p>

			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. Professional communications Russian language. Professional communications
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4. COURSE WORKLOAD AND TRAINING ACTIVITIES

Course workload of the discipline "**Animal health and welfare**" is 4 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				
			4	-	-	-	
Contact academic hours		72	72	-	-	-	
including							
Lectures		18	18	-	-	-	
Lab work		54	54	-	-	-	
Seminars (workshops/tutorials)		-	-	-	-	-	
Self-study		52	52	-	-	-	
Evaluation and assessment (exam/pass/fail grading)		20	20	-	-	-	
Course workload		Academic hour	144	144	-	-	-
		Credit unit	4	4	-	-	-

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				
			4	-	-	-	
Contact academic hours		36	36	-	-	-	
including							
Lectures		18	18	-	-	-	
Lab work		18	18	-	-	-	
Seminars (workshops/tutorials)		-	-	-	-	-	
Self-study		98	98	-	-	-	
Evaluation and assessment (exam/pass/fail grading)		10	10	-	-	-	
Course workload		Academic hour	144	144	-	-	-
		Credit unit	4	4	-	-	-

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 hygiene	Topic 1.1. Air hygiene.	Lectures, Lab work.

	Topic 1.2. Hygiene of the microclimate.	Lectures, Lab work.
	Topic 1.3. Soil hygiene.	Lectures, Lab work.
	Topic 1.4. Hygiene of water supply.	Lectures, Lab work.
	Topic 1.5. Hygiene of feed.	Lectures, Lab work.
	Topic 1.6. Keeping animals.	Lectures, Lab work.
	Topic 1.7. Hygiene of pasture maintenance, transportation of animals and raw materials.	Lectures, Lab work.
	Topic 1.8. Hygiene of livestock facilities.	Lectures, Lab work.
	Topic 1.9. Hygiene of sanitary equipment.	Lectures, Lab work.
	Topic 1.10. Personal hygiene of employees working with animals.	Lectures, Lab work.
	Topic 1.11. Environmental hygiene.	Lectures, Lab work.
Section 2. Private hygiene	Topic 2.1. Hygiene of cattle.	Lectures, Lab work.
	Topic 2.2. Hygiene of pigs and MRS.	Lectures, Lab work.
	Topic 2.3. Hygiene of horses.	Lectures, Lab work.
	Topic 2.4. Hygiene of poultry.	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)
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Lecture	An auditorium for conducting lecture-type classes, equipped with a set of specialized furniture; a board (screen) and technical means of multimedia presentations.	- <i>Zoological models.</i> - <i>Information stands.</i>
Laboratory	An auditorium for laboratory work, individual consultations, routine monitoring and interim certification, equipped with a set of specialized furniture and equipment.	- <i>Zoological models.</i> - <i>Information stands.</i>
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. Volkov G.K. Animal hygiene : textbook / G.K. Volkov, I.R. Smirnova. - Electronic text data. - St. Petersburg : Quadro, 2020. - 504 p. - http://lib.rudn.ru/MegaPro/UserEntry?Action=Rudn_FindDoc&id=487546&idb=0
2. Workshop on animal hygiene : textbook / A.F. Kuznetsov, V.G. Tyurin, V.G. Semenov [et al.]; under the general editorship of A.F. Kuznetsov. - 2nd ed., reprint. and additional ; Electronic text data. - St. Petersburg : Quadro, 2020. - 384 p. - http://lib.rudn.ru/MegaPro/UserEntry?Action=Rudn_FindDoc&id=487551&idb=0

Additional Reading:

1. Chikalev A.I., Yuldashbayev Yu.A. ZOOHYENA. - M.: GEOTAR-Media, 2012. - 240 p.
2. V.A. Medvedsky Animal hygiene: textbook for students of specialty: "Veterinary medicine" of agricultural universities. - Minsk: Technoprospektiva, 2009. - 617 p.
3. Normative and zoohygenic requirements in animal husbandry: a practical guide / V.A. Medvedsky, D.G. Gotovsky et al. – Vitebsk UO VGAVM, 2010. – 343 p.
4. Kuznetsov A.F., Nikitin G.S. Modern technologies and hygiene of poultry keeping – M.: Lan, 2012 – 352 p. <https://e.lanbook.com/book/3737>
5. Hygiene of farm animals [Text] : In 2 hours: Methodological recommendations for laboratory and practical classes. Part 1 : Methods of monitoring the microclimate of livestock premises / M.S. Naydensky [et al.]; M.S.Naydensky et al. - 2nd ed., supplement and revision - M. : MGAVMiB named after K.I.Scriabin, 2001. – 110 p .
6. Hygiene of farm animals [Text]: In 2 hours: Methodological recommendations for laboratory and practical classes. Part 2 : Zoohygenic control of soil, water and feed / M.S.

Naidensky [et al.]; M.S.Naidensky et al. - M.: MGAVMiB named after K.I.Scriabin, 2002. - 119 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 "**Animal health and welfare**".
2. Laboratory workshop on the discipline "**Animal health and welfare**".

* - 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 "**Animal health and welfare**" 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

Bolshakova M.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