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

Agrarian and Technological Institute

WORKING COURSE SYLLABUS

Feeding animals with the basics of forage production

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 "**Feeding animals with the basics of forage production**" is to study the basics of animal nutrition, the organization of feeding different types of animals to obtain genetically determined productivity with high quality, preservation of health and reproduction.

2. REQUIREMENTS FOR THE RESULTS OF MASTERING THE DISCIPLINE

The development of the discipline "**Feeding animals with the basics of forage production**" 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 -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 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 -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 -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 -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 -16	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	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
		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
		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

		PC-16.4 Take corrective measures to implement measures to prevent the occurrence of non-infectious animal diseases based on the results of control
		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
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	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 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 -20	Ability to develop an annual plan of antiepizootic measures, a plan for the prevention of non-infectious animal diseases, a plan of veterinary and sanitary measures.	PC-20.1 Able to conduct epizootological examination of the organization, territory.
		PC-20.2 He is able to develop an annual plan of antiepizootic and antiparasitic 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 -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 "**Feeding animals with the basics of forage production**" 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 "**Feeding animals with the basics of forage production**".

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 -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	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 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
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	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 -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	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 Dermatology Cardiology Endocrinology Nephrology Reconstructive and reconstructive surgery Veterinary Ophthalmology Animal Dentistry
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	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 Cardiology Endocrinology Nephrology Reconstructive and reconstructive surgery

			Veterinary Ophthalmology Animal Dentistry
PC -13	Ability to develop recommendations for special feeding of sick animals for therapeutic purposes.	Physiology and ethology of animals	Pathological physiology Internal non-infectious diseases General surgery Private Veterinary surgery Medicinal and poisonous plants Forage plants Anesthesiology, intensive care and intensive care Dermatology Cardiology Endocrinology Nephrology
PC -16	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	Veterinary genetics Life safety Physiology and ethology of animals Breeding with the basics of private animal husbandry Animal health and welfare	Obstetrics, gynecology 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 Animal health and welfare	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 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
PC -20	Ability to develop an annual plan of antiepizootic measures, a plan for the prevention of non-infectious animal diseases, a plan of veterinary and sanitary measures.	Veterinary microbiology and mycology Animal health and welfare	Internal non-infectious diseases General surgery Private Veterinary surgery Parasitology and invasive diseases Epizootology 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
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	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 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

4. COURSE WORKLOAD AND TRAINING ACTIVITIES

Course workload of the discipline "**Feeding animals with the basics of forage production**" is 7 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	**5**	**-**	**-**
Contact academic hours	90	36	54	-	-
including					
Lectures	36	18	18	-	-
Lab work	54	18	36	-	-
Seminars (workshops/tutorials)	-	-	-	-	-
Self-study	140	62	78	-	-

Evaluation and assessment (exam/pass/fail grading)		22	10	12	-	-
Course workload	Academic hour	**252**	**108**	**144**	-	-
	Credit unit	**7**	**3**	**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	**5**	-	-
Contact academic hours		36	18	18	-	-
including						
Lectures		-	-	-	-	-
Lab work		36	18	18	-	-
Seminars (workshops/tutorials)		-	-	-	-	-
Self-study		190	74	116	-	-
Evaluation and assessment (exam/pass/fail grading)		26	16	10	-	-
Course workload	Academic hour	**252**	**108**	**144**	-	-
	Credit unit	**7**	**3**	**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. Assessment of feed nutrition.	Topic 1.1 Chemical composition of feed as a primary indicator of their nutritional value. The content and concentration of nutrients in feed.	Lectures, Lab work.
	Topic 1.2 Determination of digestibility of feeds and diets. The use of nutrients in the animal's body.	Lectures, Lab work.
	Topic 1.3 Energy nutrition of feed. CE and feed units. Energy nutritional value of feed. Exchange energy.	Lectures, Lab work.
	Topic 1.4 Protein nutrition of feed.	Lectures, Lab work.

	Topic 1.5 Mineral and vitamin nutrition of feed.	Lectures, Lab work.
Section 2. Feed.	Topic 2.1 Production evaluation of feed.	Lectures, Lab work.
	Topic 2.2 Analysis of feeds of various origins.	Lectures, Lab work.
	Topic 2.3 Types of feed and their purpose.	Lectures, Lab work.
Section 3. Normalized feeding of animals of different species.	Topic 3.1 Norms of animal feeding.	Lectures, Lab work.
	Topic 3.2 The technique of making rations.	Lectures, Lab work.
	Topic 3.3 Analysis of diets.	Lectures, Lab work.
	Topic 3.4 Feeding cattle.	Lectures, Lab work.
	Topic 3.5 Feeding sheep.	Lectures, Lab work.
	Topic 3.6 Feeding goats.	Lectures, Lab work.
	Topic 3.7 Feeding horses.	Lectures, Lab work.
	Topic 3.8 Feeding pigs.	Lectures, Lab work.
	Topic 3.9 Feeding birds.	Lectures, Lab work.
	Topic 3.10 Feeding dogs and cats.	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. Khaziakhmetov F.S. Rational feeding of animals [Electronic resource]: Textbook / F.S. Khaziakhmetov. - St. Petersburg: Publishing House "Lan", 2017. - 364 p. http://lib.rudn.ru/MegaPro/UserEntry?Action=Rudn_FindDoc&id=464959&idb=0
2. Khokhrin S.N. Feeding cattle, sheep, goats and horses : textbook / S.N. Khokhrin. - 2nd ed., supplement and revision ; Electronic text data. - St. Petersburg : Quadro, 2019. - 488 p. http://lib.rudn.ru/MegaPro/UserEntry?Action=Rudn_FindDoc&id=487733&idb=0
3. Priestach Nikolay Vladimirovich. Feeding of farm animals with the basics of feed production / N.V. Priestach, L.N. Priestach. - Electronic text data. - St. Petersburg : Quadro, 2020. - 372 p. - http://lib.rudn.ru/MegaPro/UserEntry?Action=Rudn_FindDoc&id=487735&idb=0

Additional Reading:

1. Faritov T.A. Feed and feed additives for animals [Electronic resource] : Textbook / T.A. Faritov. - St. Petersburg : Publishing house "Lan", 2010. - 304 p.http://lib.rudn.ru/MegaPro/UserEntry?Action=Rudn_FindDoc&id=465289&idb=0
2. Khokhrin S.N. Feeding dogs [Electronic resource] : Textbook / S.N. Khokhrin, K.A. Rozhkov, I.V. Lunegova. - St. Petersburg : Publishing house "Lan", 2015. - 288 p. http://lib.rudn.ru/MegaPro/UserEntry?Action=Rudn_FindDoc&id=465112&idb=0
3. Tokarev V. S., Animal feeding with the basics of feed production. Textbook. - M.: Infra-M, 2016. - 592 p. Alexandrov S., Kosova T. Rabbits. Breeding growing feeding. - St. Petersburg: AST, 2011. - 157 p.
4. Rakhmanov A. I., Maslova Yu. V. Feeding domestic chickens. - St. Petersburg: Aquarium-Print, 2016. - 48 p.
5. Feeding horses. /Kalashnikov V. V., Draganov I.F., Memedeikin V. G. Ed. Svitova V. I. - M.: GEOTAR-Media, 2011. - 224 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 "**Feeding animals with the basics of forage production**".
2. Laboratory workshop on the discipline "**Feeding animals with the basics of forage production**".

* - 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 "**Feeding animals with the basics of forage production**" 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.

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