Federal State Autonomous Educational Institution of Higher Education
PEOPLES' FRIENDSHIP UNIVERSITY OF RUSSIA
RUDN University

Agrarian and Technological Institute

educational division (faculty/institute/academy) as higher education programme developer

COURSE SYLLABUS

Clinical Diagnostics

course title

Recommended by the Didactic Council for the Education Field of:

36.05.01 Veterinary

field of studies / speciality code and title

The course instruction is implemented within the professional education programme of higher education:

Veterinary

higher education programme profile/specialisation title

2024

1. GOALS AND OBJECTIVES OF THE COURSE

The aim of mastering the course "**Clinical diagnostics**" is to form fundamental and professional knowledge about the diagnosis of changes in physiological processes and functions in the body of mammals and birds, about their qualitative originality in the body of productive farm animals, domestic, laboratory and exotic animals, necessary for a veterinarian to scientifically substantiate measures related to the diagnosis and subsequent therapy of diseases. The aim is to create optimal conditions for keeping, feeding and exploiting animals, preventing diseases, assessing health, the nature and degree of violations of the activity of organs and the body, determining ways and means of influencing the body in order to correct the activity of organs. The purpose of mastering the course "Clinical diagnostics" is the formation of fundamental and professional knowledge about the diagnosis of changes in physiological processes and functions in the body of mammals and birds, about their qualitative originality in the body of productive farm animals, domestic, laboratory and exotic animals, necessary for a veterinarian to scientifically substantiate measures related to the diagnosis and subsequent therapy of diseases, with the creation of optimal conditions for the maintenance, feeding and exploitation of animals, the prevention of diseases, assessment of health, nature and degree of violations of the activity of organs and the body, determination of ways and means of influencing the body in order to correct the activity of organs.

2. REQUIREMENTS FOR LEARNING OUTCOMES

The implementation of the course "**Clinical diagnostics**" 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 course (results of the development of the discipline)

Competence code	Competence descriptor	Indicators of competence accomplishment (within the discipline)
GPC-1	Able to determine the biological status and normative clinical indicators of animal organs and systems	GPC-1.3 Can determine the main indicators of the activity of individual body systems and draw conclusions about the presence of deviations from the normative values.
		GPC-1.4 Knows how to take samples of biological fluids and tissues for research, how to perform laboratory research, interpretation of research results.
PC-1	Ability to gather a history of the animal's life and health for further diagnosis and planning of treatment and preventive	PC-1.1 Gathers the animal's life history, information on routine vaccinations, deworming and other preventive treatments.

	measures.	PC-1.2 Collects information on past illnesses, surgical interventions, current chronic illnesses, and ongoing therapy for these illnesses.
		PC-1.3 Collects information on changes in the animal's condition during the course of the disease, diagnostic and therapeutic measures taken, medications used and methods of physical therapy.
PC-2	Ability to perform a complete initial clinical examination of the animal to make a preliminary clinical diagnosis(s) and repeat examinations to monitor the patient's condition.	PC-2.1 Observes the technique and procedure of clinical examination, taking into account the type of animal and its condition.
		PC-2.2 Identifies signs (symptoms) of deviations from normal function, recognizes standard combinations of signs (syndromes).
		PC-2.3 Records the results of the examination in the patient's chart/other medical documents

3. COURSE IN HIGHER EDUCATION PROGRAMME STRUCTURE

The course "**Clinical diagnostics**" 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 course "**Clinical diagnostics**".

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

Competence code	Competence descriptor	Previous courses/modules, internships*	Subsequent courses/modules, internships*
GPC-1	Able to determine the biological status and normative clinical indicators of animal organs and systems		Clinical laboratory diagnostics Laboratory diagnostics of infectious and invasive diseases Study practice Clinical internship Industrial practice Academic research

			practice with the preparation of a scientific qualification project Preparation for and passing the state exam
PC-1	Ability to gather a history of the animal's life and health for further diagnosis and planning of treatment and preventive measures.		Horse diseases Diseases of productive animals Diseases of small pets Diseases of bees and entomophages Fish pathology and aquaculture Diseases of exotic animals Study practice Clinical internship Industrial practice Academic research practice with the preparation of a scientific qualification project Preparation for and passing the state exam
PC-2	Ability to perform a complete initial clinical examination of the animal to make a preliminary clinical diagnosis(s) and repeat examinations to monitor the patient's condition.		Horse diseases Diseases of productive animals Diseases of small pets Diseases of bees and entomophages Fish pathology and aquaculture Diseases of exotic animals Study practice Clinical internship Industrial practice Academic research practice with the preparation of a scientific qualification project Preparation for and passing the state exam

4. COURSE WORKLOAD AND TRAINING ACTIVITIES

Course workload of the course " **Clinical diagnostics** " 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			
			5	**6**	**-**	**-**
Contact academic hours		102	51	51	-	-
including						
Lectures		34	17	17	-	-
Lab work		68	34	34	-	-
Seminars (workshops/tutorials)		-			-	-
Self-study		118	71	47	-	-
Evaluation and assessment (exam/pass/fail grading)		32	22	10	-	-
Course workload	Academic hour	**252**	**144**	**108**	**-**	**-**
	Credit unit	**7**	**4**	**3**	**-**	**-**

5. COURSE CONTENTS

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

Modules	Content of the modules (topics)	Types of academic activities
Module 1. General clinical diagnosis.	Topic 1.1 Introduction.	Lectures, Lab work.
	Topic 1.2 Biogeocenotic diagnostics.	Lectures, Lab work.
Module 2. Private clinical diagnostics. Cardiovascular and respiratory systems.	Topic 2. 1 Cardiovascular system.	Lectures, Lab work.
	Topic 2.2 Respiratory system.	Lectures, Lab work.
Module 3. Private clinical diagnostics. Organ systems.	Topic 3.1 The digestive system.	Lectures, Lab work.
	Topic 3.2 Urinary system.	Lectures, Lab work.
	Topic 3.3 The nervous system.	Lectures, Lab work.
	Topic 3.4 Fundamentals of clinical biochemistry.	Lectures, Lab work.
	Topic 3.5 Endocrine system.	Lectures, Lab work.

6. COURSE EQUIPMENT 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 course** (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.	*- Portable ultrasound machine.* *- Endoscopic equipment.* *- Biochemical analyzer of blood, urine and hematological analyzer of blood (ILAB 650, PCE 90VET, etc.).* *- Hemometers GS (Sali).* *- Goryaev's counting chamber.* *- Electrokimograph.* *- Biological microscopes.* *- Devices for determining the rate of erythrocyte sedimentation: Panchenkov capillaries.* *- Registration capsule (set)* *- Counter of shaped blood elements.* *- Korotkov tonometer for measuring blood pressure* *- Phonendoscope.* *- Mixers (melangers) for counting leukocytes, erythrocytes* *- A device for determining the Rh factor, blood groups*
Laboratory	An auditorium for laboratory work, individual consultations, routine monitoring and interim certification, equipped with a set of specialized furniture and equipment.	*- Portable ultrasound machine.* *- Endoscopic equipment.* *- Biochemical analyzer of blood, urine and hematological analyzer of blood (ILAB 650, PCE 90VET, etc.).* *- - Hemometer GS (Sali).* *- Goryaev's counting chamber.* *- Electrokimograph.* *- Biological microscopes.* *- Devices for determining the rate of erythrocyte sedimentation: Panchenkov capillaries.* *- Registration capsule (set)* *- Counter of shaped blood elements.* *- Korotkov tonometer for measuring blood pressure* *- Phonendoscope.* *- Mixers (melangers) for counting leukocytes, erythrocytes* *- A device for determining the Rh*

		factor, blood groups
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. RESOURCES RECOMMENDED FOR COURSE STUDIES

Main readings:

1. Ivanov A.A. Clinical laboratory diagnostics [Electronic resource] : Textbook / A.A. Ivanov. – St. Petersburg : Publishing House "Lan", 2017. - 432 p. http://lib.rudn.ru/MegaPro/UserEntry?Action=Rudn_FindDoc&id=465014&idb=0
2. Usha Boris Veniaminovich. 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. : http://lib.rudn.ru/MegaPro/UserEntry?Action=Rudn_FindDoc&id=487452&idb=0
3. Clinical diagnostics in veterinary medicine 2020.-161 p. https://e.lanbook.com/book/148538

Additional Readings:

1. Kalyuzhny I.I., Shcherbakov G.G. Clinical gastroenterology of animals / Yashin A.V., Barinov N.D., Derezina T.N. – M.: Lan, 2015 – 448s. https://e.lanbook.com/book/61362
2. Korobov A.V., Savinkov A.V., Vorobyev A.V., Savinkova M.V. Dictionary of veterinary terms on clinical diagnosis and internal non-infectious diseases. - 1-ed. ed. - St. Petersburg: Lan, 2007. - 320 p.
3. Clinical diagnostics of internal non-infectious animal diseases/Usha B.V., Belyakov I.M., Pushkarev R.P.-M., 2004.- 835 p.
4. Kamyshnikov, V. S. Pocket doctor's guide to laboratory diagnostics / V.S. Kamyshnikov. - M.: MEDpress-inform, 2014. - 400 p.
5. Medvedeva, M. Clinical veterinary laboratory diagnostics. Handbook for veterinarians / M. Medvedeva. - M.: Aquarium-Print, 2013. - 416 p.
6. Annikova L.V. CLINICAL DIAGNOSTICS. - Saratov: Saratov State Pedagogical University, 2016. - 114 p.

Internet sources
1. Electronic libraries (EL) of RUDN University and other institutions, to which university students have access on the basis of concluded agreements:
- RUDN Electronic Library System (RUDN ELS) http://lib.rudn.ru/MegaPro/Web
- EL "University Library Online" http://www.biblioclub.ru
- EL "Yurayt" http://www.biblio-online.ru
- EL "Student Consultant" www.studentlibrary.ru
- EL "Lan" http://e.lanbook.com/

- EL "Trinity Bridge"

2.*Databases and search engines:*
- electronic foundation of legal and normative-technical documentation http://docs.cntd.ru/
- Yandex search engine https:// www.yandex.ru/
- Google search engine https://www.google.ru/
- Scopus abstract database 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 course "**Clinical diagnostics**".
2. Laboratory workshop on the course "**Clinical diagnostics**".

* - The training toolkit and guidelines for the internship are placed on the internship page in the university telecommunication training and information system under the set procedure.

8. ASSESSMENT TOOLKIT AND GRADING SYSTEM* FOR EVALUATION OF STUDENTS' COMPETENCES LEVEL AS COURSE RESULTS

The assessment toolkit and the grading system* to evaluate the level of competences (competences in part) formation as the course results are specified in the Appendix to the course syllabus.

* The assessment toolkit and the grading system are formed on the basis of the requirements of the relevant local normative act of RUDN University (regulations / order).

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