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**Federal State Autonomous Educational Institution of Higher Education
Peoples' Friendship University of Russia named after Patrice Lumumba
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

1. COURSE GOAL(s)

The goal of the course "**Clinical diagnostics**" is to familiarize students with the theoretical background, terminology, and concepts of the discipline, 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.

2. REQUIREMENTS FOR LEARNING OUTCOMES

Mastering the course (module) "**Clinical diagnostics**" is aimed at the development of the following competences /competences in part:

Table 2.1. List of competences that students acquire through the course study

Competence code	Competence descriptor	Competence formation indicators (within this course)
GPC-1	Able to determine the biological status and normative clinical parameters of the organs and systems of animal organisms.	GPC-1.3 Able to determine the main functional indicators of individual body systems and draw conclusions about deviations from normative values.
		GPC-1.4 Possesses skills in collecting biological fluid and tissue samples for research, conducting laboratory studies, and interpreting research results.
PC-1	Ability to collect anamnesis of the life and health of an animal for further diagnosis and planning of treatment and preventive measures.	PC-1.1 Collects anamnesis regarding the animal's life, scheduled vaccinations, deworming, and other preventive treatments.
		PC-1.2 Collects information about past diseases, surgical interventions, current chronic diseases, and ongoing therapies.
		PC-1.3 Collects information about changes in the animal's condition during illness, performed diagnostic and therapeutic measures, used medications, and physiotherapy methods.
PC-2	Ability to perform a complete initial clinical examination of an animal for establishing a preliminary clinical diagnosis (diagnoses) and conduct follow-up examinations to monitor	PC-2.2 Identifies signs (symptoms) of deviations from normal function and recognizes standard symptom combinations (syndromes).
		PC-2.3 Records examination results in the patient's chart and other medical documentation.

Competence code	Competence descriptor	Competence formation indicators (within this course)
	the patient's condition.	

3.COURSE IN HIGHER EDUCATION PROGRAMME STRUCTURE

The course "**Clinical diagnostics**" refers to the core component of (B1) block of the higher educational programme curriculum.

Within the higher education programme students also master other (modules) and / or internships that contribute to the achievement of the expected learning outcomes as results of the course study.

Table 3.1. The list of the higher education programme components/disciplines that contribute to the achievement of the expected learning outcomes as the course study results

Competence code	Competence descriptor	Previous courses/modules*	Subsequent courses/modules*
GPC-1	Able to determine the biological status and normative clinical parameters of the organs and systems of animal organisms.		Operative Surgery with Topographic Anatomy Laboratory Diagnostics with Elements of Artificial Intelligence Technology Veterinary Assistant Skills Clinical Industrial Practice Clinical Internship Industrial Research Practice
PC-1	Ability to collect anamnesis of the life and health of an animal for further diagnosis and planning of treatment and preventive measures.		Fish Pathology and Aquaculture Equine Diseases Diseases of Farm Animals Small Animal Diseases Bee Diseases and Entomophages Exotic Animal Diseases Educational Practice Clinical Industrial Practice Clinical Internship Industrial Research Practice
PC-2	Ability to perform a complete initial clinical examination of an animal for establishing a preliminary clinical diagnosis (diagnoses) and conduct follow-up examinations to monitor the patient's		Fish Pathology and Aquaculture Equine Diseases Diseases of Farm Animals Small Animal Diseases Bee Diseases and Entomophages Exotic Animal Diseases Educational Practice Clinical Industrial Practice

Competence code	Competence descriptor	Previous courses/modules*	Subsequent courses/modules*
	condition		Clinical Internship Industrial Research Practice

* To be filled in according to the competence matrix of the higher education programme.

4. COURSE WORKLOAD AND ACADEMIC ACTIVITIES

The total workload of the course "**Clinical diagnostics**" is 7 credits (252 academic hours).

Table 4.1. Types of academic activities during the periods of higher education programme mastering (**full-time training**)*

Type of academic activities	Total academic hours	Semesters/training modules			
		5	6	-	-
<i>Contact academic hours</i>	<i>102</i>	<i>51</i>	<i>51</i>	<i>-</i>	<i>-</i>
including:					
Lectures (LC)	34	17	17	-	-
Lab work (LW)	68	34	34	-	-
Seminars (workshops/tutorials) (S)	-			-	-
<i>Self-studies</i>	<i>105</i>	<i>66</i>	<i>39</i>	<i>-</i>	<i>-</i>
<i>Evaluation and assessment (exam/passing/failing grade)</i>	<i>45</i>	<i>27</i>	<i>18</i>	<i>-</i>	<i>-</i>
Course workload	academic hours	252	144	108	-
	credits	7	4	3	-

5. COURSE CONTENTS

Table 5.1. Course contents and academic activities types

Course module title	Course module contents (topics)	Academic activities types
Module 1. General clinical diagnosis.	Topic 1.1 Introduction.	LC, LW
	Topic 1.2 Biogeocenotic diagnostics.	LC, LW
Module 2. Private clinical diagnostics. Cardiovascular and respiratory systems.	Topic 2. 1 Cardiovascular system.	LC, LW
	Topic 2.2 Respiratory system.	LC, LW
Module 3. Private clinical diagnostics. Organ systems.	Topic 3.1 The digestive system.	LC, LW
	Topic 3.2 Urinary system.	LC, LW
	Topic 3.3 The nervous system.	LC, LW
	Topic 3.4 Fundamentals of clinical biochemistry.	LC, LW
	Topic 3.5 Endocrine system.	LC, LW

* - to be filled in only for **full**-time training: LC - lectures; LW - lab work; S - seminars.

6. CLASSROOM EQUIPMENT AND TECHNOLOGY SUPPORT REQUIREMENTS

Table 6.1. Classroom equipment and technology support requirements

Type of academic activities	Classroom equipment	Specialised educational / laboratory equipment, software, and materials for course study (if necessary)
Lecture	A lecture hall for lecture-type classes, equipped with a set of specialised furniture; board (screen) and technical means of multimedia presentations.	<ul style="list-style-type: none"> - 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. - Elektrokimograph. - 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
Lab work	A classroom for laboratory work, individual consultations, current and mid-term assessment; equipped with a set of specialised furniture and machinery.	<ul style="list-style-type: none"> - 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. - Elektrokimograph. - Biological microscopes. - Devices for determining the

Type of academic activities	Classroom equipment	Specialised educational / laboratory equipment, software, and materials for course study (if necessary)
		<i>rate of erythrocyte sedimentation: Panchenkov capillaries.</i> - 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	A classroom for independent work of students (can be used for seminars and consultations), equipped with a set of specialised furniture and computers with access to the electronic information and educational environment.	

* The premises for students' self-studies are subject to **MANDATORY** mention

7. RESOURCES RECOMMENDED FOR COURSE STUDY

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., Derezhina 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.elsevier.com/locate/scopus/>

Training toolkit for self- studies to master the course *:

1. The set of lectures on the course "**Clinical diagnostics**"
2. The laboratory workshop (if any).on the course "**Clinical diagnostics**"

* The training toolkit for self- studies to master the course is placed on the course page in the university telecommunication training and information system under the set procedure.

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position, department

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