

Документ подписан простой электронной подписью  
Информация о владельце:  
ФИО: Ястребов Олег Александрович  
Должность: Ректор  
Дата подписания: 19.05.2023 16:30:33  
Уникальный программный ключ:  
ca953a0120d891083f939673078ef1a989dae18a

**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:**

**36.05.01 Veterinary**

---

higher education programme profile/specialisation title

## 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)*

<b>Competence code</b>	<b>Competence descriptor</b>	<b>Indicators of competence accomplishment (within the discipline)</b>
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

			<p>practice with the preparation of a scientific qualification project</p> <p>Preparation for and passing the state exam</p>
PC-1	<p>Ability to gather a history of the animal's life and health for further diagnosis and planning of treatment and preventive measures.</p>		<p>Horse diseases</p> <p>Diseases of productive animals</p> <p>Diseases of small pets</p> <p>Diseases of bees and entomophages</p> <p>Fish pathology and aquaculture</p> <p>Diseases of exotic animals</p> <p>Study practice</p> <p>Clinical internship</p> <p>Industrial practice</p> <p>Academic research practice with the preparation of a scientific qualification project</p> <p>Preparation for and passing the state exam</p>
PC-2	<p>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.</p>		<p>Horse diseases</p> <p>Diseases of productive animals</p> <p>Diseases of small pets</p> <p>Diseases of bees and entomophages</p> <p>Fish pathology and aquaculture</p> <p>Diseases of exotic animals</p> <p>Study practice</p> <p>Clinical internship</p> <p>Industrial practice</p> <p>Academic research practice with the preparation of a scientific qualification project</p> <p>Preparation for and passing the state exam</p>

#### 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		105	51	54	-	-	
including							
Lectures		35	17	18	-	-	
Lab work		70	34	36	-	-	
Seminars (workshops/tutorials)		-			-	-	
Self-study		117	37	80	-	-	
Evaluation and assessment (exam/pass/fail grading)		30	20	10	-	-	
<b>Course workload</b>		Academic hour	<b>252</b>	<b>108</b>	<b>144</b>	-	-
		Credit unit	<b>7</b>	<b>3</b>	<b>4</b>	-	-

#### 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

<i>Classroom for Academic Activity Type</i>	<i>Equipping the classroom</i>	<b>Specialized educational/laboratory equipment, software and materials for the development of the course (if necessary)</b>
Lecture	An auditorium for conducting lecture-type classes, equipped with a set of specialized furniture; a board (screen) and technical means of multimedia presentations.	<ul style="list-style-type: none"> <li>- Portable ultrasound machine.</li> <li>- Endoscopic equipment.</li> <li>- Biochemical analyzer of blood, urine and hematological analyzer of blood (ILAB 650, PCE 90VET, etc.).</li> <li>- Hemometers GS (Sali).</li> <li>- Goryaev's counting chamber.</li> <li>- Elektrokimograph.</li> <li>- Biological microscopes.</li> <li>- Devices for determining the rate of erythrocyte sedimentation: Panchenkov capillaries.</li> <li>- Registration capsule (set)</li> <li>- Counter of shaped blood elements.</li> <li>- Korotkov tonometer for measuring blood pressure</li> <li>- Phonendoscope.</li> <li>- Mixers (melangers) for counting leukocytes, erythrocytes</li> <li>- A device for determining the Rh factor, blood groups</li> </ul>
Laboratory	An auditorium for laboratory work, individual consultations, routine monitoring and interim certification, equipped with a set of specialized furniture and equipment.	<ul style="list-style-type: none"> <li>- Portable ultrasound machine.</li> <li>- Endoscopic equipment.</li> <li>- Biochemical analyzer of blood, urine and hematological analyzer of blood (ILAB 650, PCE 90VET, etc.).</li> <li>- Hemometer GS (Sali).</li> <li>- Goryaev's counting chamber.</li> <li>- Elektrokimograph.</li> <li>- Biological microscopes.</li> <li>- Devices for determining the rate of erythrocyte sedimentation: Panchenkov capillaries.</li> <li>- Registration capsule (set)</li> <li>- Counter of shaped blood elements.</li> <li>- Korotkov tonometer for measuring blood pressure</li> <li>- Phonendoscope.</li> <li>- Mixers (melangers) for counting leukocytes, erythrocytes</li> <li>- A device for determining the Rh</li> </ul>

		<i>factor, blood groups</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. 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](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](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](http://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/](https://www.yandex.ru/)
- Google search engine <https://www.google.ru/>
- Scopus abstract database <http://www.elsevier.com/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).

### **DEVELOPER:**

Associate Professor of the Department of Veterinary  
Medicine

\_\_\_\_\_  
Position, Basic curriculum

Signature

Karamyan A.S.

\_\_\_\_\_  
Full name.

### **HEAD OF EDUCATIONAL DEPARTMENT:**

Department of Veterinary Medicine

\_\_\_\_\_  
Name Basic Curriculum

Signature

Vatnikov Yu.A.

\_\_\_\_\_  
Full name.

### **HEAD OF HIGHER EDUCATION PROGRAMME:**

Director of the Department of Veterinary Medicine

\_\_\_\_\_  
Position, Basic curriculum

Signature

Vatnikov Yu.A.

\_\_\_\_\_  
Full name