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**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

Instrumental diagnostic methods

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:

higher education programme profile/specialisation title

1. COURSE GOAL(s)

The purpose of mastering the discipline «**Instrumental diagnostic methods**» is the formation of professional knowledge and skills for the use in veterinary medicine of medical devices and methods intended for the diagnosis and differential diagnosis of diseases of various etiologies in animals. This is necessary for the veterinarian to correctly apply the methods and correctly interpret the results obtained, scientifically substantiate his actions and decisions taken to prescribe and treat animals.

2. REQUIREMENTS FOR LEARNING OUTCOMES

Mastering the discipline «**Instrumental diagnostic methods**» is aimed at developing the following competencies (parts of competencies) in students:

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

Competence code	Competence descriptor	Competence formation indicators (within this course)
GPC-7	Able to understand the principles of operation of modern information technologies and use them to solve problems of professional activity.	GPC-7.3 Has the skills to work on modern medical diagnostic and treatment equipment with software
PC-5	Ability and willingness to plan and conduct the necessary types of instrumental diagnostics of the patient's condition	PC-5.1 Has knowledge of modern methods of instrumental diagnostics, features of their use, indications, possible complications and contraindications to their use.
		PC-5.2 Selects the necessary and sufficient set of instrumental diagnostic methods to solve the problem.
		PC-5.3 Able to carry out instrumental diagnostics of diseases in animals.
		PC-5.4 Interprets the diagnostic results and uses them to solve the task.

3. THE PLACE OF DISCIPLINE IN THE STRUCTURE OF OP VO

Discipline «**Instrumental diagnostic methods**» refers to the mandatory part of block B1 of the OP VO.

As part of the EP VO, students also master other disciplines and / or practices that contribute to the achievement of the planned results of mastering the discipline "**Instrumental diagnostic methods**".

Table 3.1. The list of components of the EP VO that contribute to the achievement planned results of mastering the discipline.

Competence code	Competence descriptor	Previous courses/modules*	Subsequent courses/modules*
GPC-7	Able to understand the principles of operation of modern information technologies and use them to solve problems of professional activity	-	-
PC-5	Ability and willingness to plan and conduct the necessary types of instrumental diagnostics of the patient's condition	-	Anesthesiology, resuscitation and intensive care Dermatology Cardiology Endocrinology Nephrology Reconstructive surgery Veterinary ophthalmology Animal Dentistry

4. COURSE WORKLOAD AND TRAINING ACTIVITIES

Course workload of the course " **Instrumental diagnostic methods** » is 2 credit units.

Table 4.1. Types of academic activities during the period of the HE program mastering for full-time study

Type of academic activities	Total academic hours	Semesters/training modules			
		6	-	-	-
Contact academic hours	54	54	-	-	-
including:					
Lectures	18	18	-	-	-
Lab work	36	36	-	-	-
Seminars (workshops/tutorials)	-	-	-	-	-
Self-study	8	8	-	-	-
Evaluation and assessment (exam/pass/fail grading)	10	10	-	-	-
The total complexity of the discipline	academic hours	72	72	-	-
	credits	2	2	-	-

Table 4.2. Types of educational work by periods of mastering OP HE for part-time and part-time forms of education

Type of academic activities	Total academic hours	Semesters/training modules			
		6	-	-	-

Contact academic hours	54	54	-	-	-
including:					
Lectures	18	18	-	-	-
Lab work	36	36	-	-	-
Seminars (workshops/tutorials)	-	-	-	-	-
Self-study	2	2	-	-	-
Evaluation and assessment (exam/pass/fail grading)	16	16	-	-	-
The total complexity of the discipline	ac.h.	72	72	-	-
	credit units	2	2	-	-

5. CONTENT OF THE DISCIPLINE

Table 5.1 The content of the discipline (module) by type of educational work

Name of the discipline section	Contents of the section (topic)	Type of study work
Section 1. Introduction to instrumental diagnostics. X-ray diagnostics.	Topic 1.1 Introduction to instrumental diagnostics.	LC, LR
	Topic 1.2 X-ray diagnostics.	LC, LR
Section 2 Ultrasonography.	Topic 2.1 Ultrasonography.	LC, LR
Section 3 Computed and magnetic resonance imaging.	Topic 3.1 CT scan.	LC, LR
	Topic 3.2 Magnetic resonance imaging.	LC, LR
Section 4 Electrocardiography, endoscopy and biopsy.	Topic 4.1 Electrocardiography.	LC, LR
	Topic 4.2 Endoscopy.	LC, LR
	Topic 4.3 Biopsy.	LC, LR

6. LOGISTICS AND TECHNICAL SUPPORT OF THE DISCIPLINE

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 course (if necessary)
Lecture	An auditorium for lecture-type classes, equipped with a set of specialized furniture; board (screen) and technical means of multimedia presentations.	<ul style="list-style-type: none"> - <i>Portable ultrasound machine.</i> - <i>Endoscopic equipment.</i> - <i>Electrokymograph.</i> - <i>Biochemical analyzer of blood, urine and hematological blood</i>

		<i>analyzer (ILAB 650, PCE 90VET, etc.)</i>
Laboratory	An auditorium for laboratory work, individual consultations, current control and intermediate certification, equipped with a set of specialized furniture and equipment.	- <i>Portable ultrasound machine.</i> - <i>Endoscopic equipment.</i> - <i>Electrokymograph.</i> - <i>Biochemical analyzer of blood, urine and hematological blood analyzer (ILAB 650, PCE 90VET, etc.)</i>
For independent work students	Audience for independent work of students (can be used for conducting seminars and consultations), equipped with a set of specialized furniture and computers with access to the EIOS.	-

7. RESOURCES RECOMMENDED FOR COURSE STUDIES

Main literature:

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. Organization of veterinary business 2019.-300s <https://e.lanbook.com/book/142440>

Additional literature:

1. Ivanov V.P. Veterinary clinical radiology - St. Petersburg: Publishing house "Lan", 2014. - 624 p. <https://e.lanbook.com/book/52618>
2. Kalyuzhny I.I., Shcherbakov G.G. Clinical gastroenterology of animals - St. Petersburg: Publishing house "Lan", 2015. - 448p. <https://e.lanbook.com/book/61362>
3. Workshop on clinical diagnostics with radiology Voronin E.S. and etc.; ed. Voronina E.S., Snoza G.V. - M. : INFRA-M, 2014 - 335 p.
4. Lukinskaya N.M. Clinical diagnostics with radiology; Ministry of Agriculture of the Russian Federation, FGOU VPO VGMHA, - Vologda; Dairy: Information Center VGMHA, 2011 - 10 p.
5. Ultrasound diagnosis of internal diseases of small domestic animals / Shabanov A.M. and etc. ; ed. Rakitskoy V.V. - M. : KolosS, 2005 - 135 p.
6. Bluth Edward I., Benson Carol B., Ralls Philip W. Ultrasound diagnostics. Practical solution of clinical problems. - M.: Medical literature, 2014. - 176 p.

Resources of the information and telecommunications network "Internet":

1. RUDN ELS and third-party ELS, to which university students have access on the basis of concluded agreements:

- RUDN Electronic Library System - RUDN EBS <http://lib.rudn.ru/MegaPro/Web>
- ELS "University Library Online" <http://www.biblioclub.ru>
- EBS Yurayt <http://www.biblio-online.ru>
- EBS "Student Advisor" www.studentlibrary.ru
- EBS "Lan" <http://eZlanbook.com/>
- EBS "Trinity Bridge" <http://www.trmost.com/>

2. Databases and search engines:

- electronic fund of legal and normative-technical documentation <http://docs.cntd.ru/>
- Yandex search engine <https://www.yandex.ru/>
- Google search engine <https://www.google.ru/>
- abstract database SCOPUS <http://www.elsevierscience.ru/products/scopus/>

Educational and methodological materials for independent work of students in the development of the discipline/module*:

1. A course of lectures on the discipline " Instrumental diagnostic methods ".
2. Laboratory workshop on the discipline " Instrumental diagnostic methods "

* - all educational and methodological materials for independent work of students are placed in accordance with the current procedure on the page of the discipline in TUIS!

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

Evaluation materials and a point-rating system* for assessing the level of competence formation (part of competences) based on the results of mastering the discipline «**Instrumental diagnostic methods**» are presented in the Appendix to this Work Program of the discipline.

* - OM and BRS are formed on the basis of the requirements of the relevant local normative act of the Peoples' Friendship University of Russia.

DEVELOPER:

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