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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**

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

**COURSE SYLLABUS**

Nephrology

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course title

**Recommended by the Didactic Council for the Education Field of:**

36.05.01 Veterinary

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field of studies / speciality code and title

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

Veterinary

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higher education programme profile/specialisation title

## 1. COURSE GOAL(s)

The course "**Nephrology**" aims to educate students in theory and practice to address the development of students' awareness in the theoretical sections of nephrology and understanding of the diagnosis, treatment, prevention and rehabilitation of nephrological diseases.

## 2. REQUIREMENTS FOR LEARNING OUTCOMES

Mastering the course (module) "**Nephrology**" 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*

<b>Competence code</b>	<b>Competence descriptor</b>	<b>Competence formation indicators (within this course)</b>
PC-3	Ability to plan differential diagnosis activities for a patient.	PC-3.1 Systematizes information on symptoms/syndromes of the disease in the patient, forming a set of preliminary diagnoses for their further confirmation or refutation.
		PC-3.2 Uses an existing or develops a unique algorithm for differential diagnosis, taking into account the capabilities of the medical institution.
		PC-3.3 Uses the information obtained from diagnostic procedures to establish a final diagnosis (or diagnoses) and to adjust the established diagnoses if necessary.
PC-5	Ability and readiness to plan and conduct necessary types of instrumental diagnostics of the patient's condition.	PC-5.2 Selects the necessary and sufficient set of instrumental diagnostic methods to solve the assigned task.
		PC-5.3 Is able to perform instrumental diagnostics of animal diseases.
		PC-5.4 Interprets diagnostic results and uses them to solve the assigned task.
PC-7	Ability to choose or develop a treatment plan for a patient based on the established diagnosis.	PC-7.1 Is able to select medications necessary for treating animals, guided by evidence-based medicine principles and considering the combined pharmacological effects of all prescribed drugs on the organism.
		PC-7.2 Is able to choose the optimal method of drug administration, calculate the dose and frequency of administration, and determine the duration of each drug course.
		PC-7.3 Is able to select non-drug, including physiotherapeutic, methods of influence on the organism of the sick animal, which contribute to its recovery, and apply them in treatment.
		PC-7.4 Is able to develop a patient treatment plan, select criteria for monitoring its

Competence code	Competence descriptor	Competence formation indicators (within this course)
		effectiveness, and determine alternative treatment plans if the initially chosen treatment methods are ineffective.

### 3. COURSE IN HIGHER EDUCATION PROGRAMME STRUCTURE

The course "Nephrology" refers to the elective 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*
PC-3	Ability to plan differential diagnosis activities for a patient.	Obstetrics, Gynecology and Andrology Internal Diseases General Surgery Private Surgery Parasitology and Invasive Diseases Dermatology Cardiology Endocrinology Oncology Neurology	Anesthesiology, Resuscitation And Intensive Therapy Reconstructive Surgery Veterinary Ophthalmology Behavioral Medicine Animal Dentistry Clinical Industrial Practice Clinical Internship Industrial Research Practice
PC-5	Ability and readiness to plan and conduct necessary types of instrumental diagnostics of the patient's condition.	Instrumental Diagnostic Methods with Elements of Artificial Intelligence Technology Dermatology Cardiology Endocrinology Oncology Neurology	Reconstructive Surgery Veterinary Ophthalmology Animal Dentistry Clinical Industrial Practice Clinical Internship Industrial Research Practice
PC-7	Ability to choose or develop a treatment plan for a patient based on the established diagnosis.	Veterinary Pharmacology Toxicology Dermatology Cardiology Endocrinology Oncology Neurology	Anesthesiology, Resuscitation And Intensive Therapy Behavioral Medicine Clinical Industrial Practice Clinical Internship Industrial Research Practice

### 4. COURSE WORKLOAD AND ACADEMIC ACTIVITIES

1)The total workload of the course "Nephrology" is 2 credits (72 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			
		9	-	-	-
<i>Contact academic hours</i>	<i>51</i>	<i>51</i>	-	-	-
including:					
Lectures (LC)	17	17	-	-	-
Lab work (LW)	34	34	-	-	-
Seminars (workshops/tutorials) (S)	-	-	-	-	-
<i>Self-studies</i>	<i>1</i>	<i>1</i>	-	-	-
<i>Evaluation and assessment (exam/passing/failing grade)</i>	<i>20</i>	<i>20</i>	-	-	-
<b>Course workload</b>	academic hours	<b>72</b>	<b>72</b>	-	-
	credits	<b>2</b>	<b>2</b>	-	-

## 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 issues of nephrology.	Topic 1.1. Functional morphology of the kidneys. Semiotics of kidney diseases. Assessment of the functional state of the kidneys.	LC, LW
Module 2. Kidney diseases.	Topic 2.1. Glomerulonephritis, pyelonephritis, kidney damage in metabolic diseases.	LC, LW
	Topic 2.2. Secondary nephropathies, congenital and hereditary nephropathies.	LC, LW

## 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.	-
Lab work	A classroom for laboratory work, individual	-

Type of academic activities	Classroom equipment	Specialised educational / laboratory equipment, software, and materials for course study (if necessary)
	consultations, current and mid-term assessment; equipped with a set of specialised furniture and machinery.	
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.	-

## 7. RESOURCES RECOMMENDED FOR COURSE STUDY

### *Main readings:*

1. 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. : ill. - (Textbooks and manuals for higher educational institutions). - ISBN 978-5-906371-03-4
2. Infectious diseases of animals : textbook / A.A. Sidorchuk, N.A. Maksimov, V.L. Kupalnik [et al.]; edited by A.A. Sidorchuk. - 2nd ed. - Moscow : INFRA-M, 2020. - 954 p. : ill. - (Higher education. Specialty). - ISBN 978-5-16-010419-5

### *Additional Readings:*

1. Infectious diseases of animals : a textbook for universities / Edited by A.A.Kudryashov, A.V.Svyatkovsky. - St. Petersburg: Lan, 2007. - 608 p. : ill. - (Veterinary medicine). - ISBN 978-5-8114-0710-1
2. 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. : ill. - (Textbooks and manuals for higher educational institutions). - ISBN 978-5-906371-03-4

### *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.elsevierscience.ru/products/scopus/>

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

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

\* 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.

**DEVELOPERS:**

Professor of the Department of Veterinary Medicine

Vatnikov Yu.A.

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position, department

name and surname

**HEAD OF EDUCATIONAL DEPARTMENT:**

Department of Veterinary Medicine

Vatnikov Yu.A.

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name of department

name and surname

**HEAD  
OF HIGHER EDUCATION PROGRAMME:**

Director of the Department of Veterinary Medicine

Vatnikov Yu.A.

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position, department

name and surname