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

**Agrarian and Technological Institute**

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

**COURSE SYLLABUS**

**Pathological anatomy**

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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:**

**36.05.01 Veterinary**

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higher education programme profile/specialisation title

## 1. COURSE GOAL

The goal of the course "**Pathological anatomy**" is to form students' knowledge of the organizational, scientific and methodological foundations of recognizing the causes and pathogenesis of pathological processes and diseases, allowing to establish the sequence of development of structural changes in the body and special knowledge for forensic examinations.

## 2. REQUIREMENTS FOR LEARNING OUTCOMES

Mastering the course "**Pathological anatomy**" is aimed at creating the following competencies (parts of competencies) for students:

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

Competence code	Competence descriptor	Competence formation indicators (within this course)
PC-6	Ability to diagnose and predict the course and spread of disease based on clinical, laboratory, and instrumental diagnostic data, as well as additional diagnostic methods.	PC-6.1 Knows the peculiarities of the manifestation of infectious, parasitic, internal non-contagious, surgical, gynecological and other diseases of animals of different species.
PC-14	Willingness to promote veterinary knowledge, including animal disease prevention.	PC-14.1 Able to analyze problems that lead to violations of animal health and welfare, based on this set goals in the field of veterinary knowledge promotion, plan strategies and tactics for upcoming activities
		PC-14.2 Able to use computer and telecommunication tools to prepare and display materials used in the process of promoting veterinary knowledge
		PC-14.3 Able to hold talks, lectures, seminars for employees of the organization to explain the principles of work on the prevention of animal diseases

## 3. COURSE IN HIGHER EDUCATION PROGRAMME STRUCTURE

The course "**Pathological anatomy**" refers to the core part of block B1 of the Educational Program of Higher Education.

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, internships*	Subsequent courses/modules, internships*
PC-6	Ability to diagnose and predict the course and spread of disease based on clinical, laboratory, and instrumental diagnostic data, as well as additional diagnostic methods.		Obstetrics, gynecology and andrology Internal diseases General surgery Private Veterinary Surgery Parasitology and invasive diseases Epizootology and infectious diseases Clinical internship Industrial practice Academic research practice with the preparation of a scientific qualification project Preparation for and passing the state exam
PC-14	Willingness to promote veterinary knowledge, including animal disease prevention.		Zoopsychology 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 ACADEMIC ACTIVITIES

The total workload of the course "**Pathological anatomy**" is 8 credits.

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	-	-
Contact academic hours	140	68	72	-	-
including					
Lectures	35	17	18	-	-

Lab work		105	51	54	-	-
Seminars (workshops/tutorials)		-	-	-	-	-
Self-study		118	20	98	-	-
Evaluation and assessment (exam/pass/fail grading)		30	20	10	-	-
<b>Course workload</b>	academic hours	<b>288</b>	<b>108</b>	<b>180</b>	-	-
	credits	<b>8</b>	<b>3</b>	<b>5</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 pathological anatomy	Topic 1.1. Thanatology.	Lectures, Lab work.
	Topic 1.2. Pathohisto technique.	Lectures, Lab work.
	Topic 1.3. Alterations.	Lectures, Lab work.
	Topic 1.4. Disorders of blood and lymph circulation.	Lectures, Lab work.
	Topic 1.5. Inflammation Immunomorphology, immunopathology.	Lectures, Lab work.
	Topic 1.6. Adaptive and compensatory reactions.	Lectures, Lab work.
Module 2. Private pathological anatomy	Topic 2.1. Infectious pathology. Pathomorphology of bacterial infections.	Lectures, Lab work.
	Topic 2.2. Pathomorphology of viral infections.	Lectures, Lab work.
	Topic 2.3. Pathomorphology of fungal diseases.	Lectures, Lab work.
	Topic 2.4. Pathomorphology of invasive diseases.	Lectures, Lab work.
	Topic 2.5. Adaptive and compensatory reactions of tumor growth.	Lectures, Lab work.
	Topic 2.6. Pathomorphology of infectious diseases.	Lectures, Lab work.

## 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	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>- <i>Information stands.</i></li> <li>- <i>Wet anatomical preparations.</i></li> <li>- <i>Micro-preparations.</i></li> <li>- <i>Biological microscopes.</i></li> <li>- <i>Digital camera for the microscope.</i></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>- <i>Information stands.</i></li> <li>- <i>Wet anatomical preparations.</i></li> <li>- <i>Micro-preparations.</i></li> <li>- <i>Biological microscopes.</i></li> <li>- <i>Digital camera for the microscope.</i></li> </ul>
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. Pathological physiology and pathological anatomy of animals : textbook / A.V. Zharov, L.N. Adamushkina, T.V. Loseva, A.P. Strelnikov ; Edited by A.V. Zharov. - 4th ed., revised. - St. Petersburg : Publishing House "Lan", 2018. - 416 p.

Pathological anatomy of animals : textbook / A.V. Zharov. - 2nd ed., reprint. and additional - St. Petersburg : Publishing house "Lan", 2013. - 608 p.

### *Additional Readings:*

1. Anatomical and physiological features of pigs and pathoanatomic autopsy of their corpses: textbook / G.V. Lukashik, V.G. Sokolov, N.V. Saenko. - St. Petersburg : Publishing House "Lan", 2016. - 100 p.
2. Workshop on pathological anatomy of animals: textbook / V. A. Salimov. - 2nd ed., reprint. and additional - St. Petersburg : Publishing house "Lan", 2013. -352 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/>
- 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 "**Pathological anatomy**".
2. Laboratory workshop on the course "**Pathological anatomy**".

\* 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.

## **8. ASSESSMENT TOOLKIT AND GRADING SYSTEM\* FOR EVALUATION OF STUDENTS' COMPETENCES LEVEL UPON COURSE COMPLETION**

The assessment toolkit and the grading system\* to evaluate the competences formation level (competences in part) upon the course study completion 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

Kulikov E. V.

Full name.

### **D 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