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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

**INTERNSHIP SYLLABUS**

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Pharmacology, clinical diagnostics, pathological anatomy

internship title

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Educational

internship type

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

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36.05.01. Veterinary

field of studies / speciality code and title

**The student's internship is implemented within the professional education programme of higher education:**

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Veterinary

higher education programme profile/specialisation title

## 1. INTERNSHIP GOAL(s)

The goal of the "**Pharmacology**" is to consolidate the theoretical knowledge, practical skills and abilities gained in the study of the course "Pharmacology".

The goal of the "**Clinical Diagnostics**" is to consolidate theoretical knowledge and acquire the skills of clinical and laboratory research of animals in order to recognize the disease and make an accurate diagnosis.

The goal of the "**Pathological Anatomy**" is to gain experience in assessing pathoanatomical changes in the organs of forcibly killed and dead animals to establish a diagnosis and conclude on the causes of death.

## 2. REQUIREMENTS FOR LEARNING OUTCOMES

The internship implementation is aimed at developing students' competencies (parts of competencies):

*Table 2.1. List of competences that students acquire during the internship*

Competence code	Competence descriptor	Competence formation indicators (within this course)
GC-1	The ability to carry out a critical analysis of problem situations based on a systematic approach, to develop an action strategy	GC-1.1 Analyzes the task, highlighting its basic components
		GC-1.2 Determines and ranks the information required to solve the task
		GC-1.3 Searches for information to solve the task for various types of requests
		GC-1.4 Offers options for solving the problem, analyzes the possible consequences of their use
		GC-1.5 Analyzes ways to solve problems of an ideological, moral and personal nature based on the use of basic philosophical ideas and categories in their historical development and socio-cultural context
GC-2	The ability to manage a project at all stages of its life cycle	GC-2.1 Formulates a problem, the solution of which is directly related to the achievement of the project goal
		GC-2.2 Determines the links between the tasks set and the expected results of their solution
		GC-2.3 Within the framework of the tasks set, determines the available resources and restrictions, the current legal norms
		GC-2.4 Analyzes the schedule for the implementation of the project as a whole and chooses the best way to solve the tasks, based on the current legal regulations and available resources and restrictions
		GC-2.5 Controls the progress of the project, adjusts the schedule in accordance with the results of control
GC-3	The ability to organize and manage the work of a team, developing a team strategy to achieve the goal	GC-3.1 Determines his role in the team, based on the strategy of cooperation to achieve the goal
		GC-3.2 Formulates and takes into account in its activities the behavioral characteristics of

		groups of people identified depending on the goal
		GC-3.3 Analyzes the possible consequences of personal actions and plans their actions to achieve a given result
		MC-3.4 Sharing information, knowledge and experience with team members
		GC-3.5 Argues his point of view regarding the use of the ideas of other team members to achieve the goal
		GC-3.6 Participates in team work to complete assignments
GC-4	The ability to communicate in interpersonal and intercultural interaction in Russian as a foreign and foreign language(s) based on the possession of interrelated and interdependent types of reproductive and productive foreign language speech activities, such as listening, speaking, reading, writing and translating in everyday life , sociocultural, educational, professional, official, business and scientific spheres of communication	GC-4.1 Chooses the style of business communication, depending on the language of communication, the purpose and conditions of the partnership
		GC-4.2 Adapts speech, communication style and body language to interaction situations
		GC-4.3 Searches for the necessary information to solve standard communication tasks in Russian and foreign languages
		GC-4.4 Performs translation of professional texts from a foreign language into Russian and vice versa
		GC-4.5 Conducts business correspondence in Russian and foreign languages, taking into account the peculiarities of the style of official and unofficial letters and socio-cultural differences in the format of correspondence
		GC-4.6 Uses dialogue for cooperation in academic communication of communication, taking into account the personality of the interlocutors, their communicative-speech strategy and tactics, the degree of formality of the situation
		GC-4.7 Forms and argues own assessment of the main ideas of the participants in the dialogue (discussion) in accordance with the needs of joint activities
GC-5	Ability to analyze and take into account the diversity of cultures in the process of intercultural interaction	GC-5.1 Interprets the history of Russia in the context of world historical development
		GC-5.2 Finds and uses information about the cultural characteristics and traditions of various social groups in social and professional communication
		GC-5.3 Takes into account, in social and professional communication on a given topic, the historical heritage and socio-cultural traditions of various social groups, ethnic groups and confessions, including world religions, philosophical and ethical teachings
		GC-5.4 Collects information on a given topic, taking into account the ethnic groups and confessions that are most widely represented at the points of the study
		GC-5.5 Substantiates the features of project

		and team activities with representatives of other ethnic groups and (or) confessions
		GC-5.6 Adheres to the principles of non-discriminatory interaction in personal and mass communication in order to fulfill professional tasks and strengthen social integration
GC-6	The ability to determine and implement the priorities of one's own activity and ways to improve it based on self-assessment and lifelong learning	GC-6.1 Controls the amount of time spent on specific activities
		GC-6.2 Develops tools and methods for time management when performing specific tasks, projects, goals
		GC-6.3 Analyzes its resources and their limits (personal, situational, temporary, etc.) for the successful completion of the task
		GC-6.4 Finds and uses sources of additional information to increase the level of general and professional knowledge
		GC-6.5 Analyzes the main opportunities and tools of lifelong education in relation to their own interests and needs, taking into account the conditions, means, personal opportunities, stages of career growth, time perspective for the development of activities and labor market requirements
		GC-6.6 Defines the tasks of self-development, goals and priorities of professional growth
		GC-6.7 Distributes tasks into long-, medium- and short-term ones with justification of relevance and analysis of resources for their implementation
GC-8	The ability to create and maintain safe living conditions in everyday life and in professional activities to preserve the natural environment, ensure the sustainable development of society, including in the event of a threat and the occurrence of emergencies and military conflicts	GC-8.1 Analyzes the factors of harmful influence on the life of the elements of the environment (technical means, technological processes, materials, buildings and structures, natural and social phenomena)
		GC-8.2 Identifies hazardous and harmful factors within the framework of the task being performed
		GC-8.3 Identifies and eliminates problems associated with safety violations in the workplace
		GC-8.4 Explains measures to prevent emergency situations
		GC-8.5 Clarifies the rules of conduct in the event of emergencies of natural and man-made origin, as well as in the event of military conflicts
		GC-8.6 Provides first aid, participates in recovery activities
GC-9	The ability to make informed economic decisions in various areas of life	GC-9.1 Possesses ideas about the principles of non-discriminatory interaction in communication in various spheres of life, taking into account the socio-psychological characteristics of persons with disabilities;
		GC-9.2 Plans and carries out professional activities with persons with disabilities or

		disabilities.
		GC-9.3 Interacts with persons with disabilities in social and professional areas.
GC-10	The ability to form an intolerant attitude towards corrupt behavior	GC -10.1 Understands the basic principles of the functioning of the economy and economic development, the goals of the form of state participation in the economy;
		GC -10.2 Applies personal economic and financial planning methods to achieve current and long-term financial goals;
		GC -10.3 Uses financial instruments to manage personal finances (personal budget), controls their own economic and financial risks.
GC-11	The ability to form an intolerant attitude towards corrupt behavior.	GC -11.1 Analyzes the current legal norms that ensure the fight against corruption in various areas of life, as well as ways to prevent corruption and form an intolerant attitude towards it;
		GC -11.2 Plans, organizes and conducts activities that ensure the formation of a civil position and the prevention of corruption in society;
		GC -11.3 Complies with the rules of public interaction based on compliance with current legislation and an intolerant attitude towards corruption.
GC-12	The ability to search for the necessary sources of information and data, perceive, analyze, memorize and transmit information using digital means, as well as using algorithms when working with data obtained from various sources in order to effectively use the information received to solve problems; evaluate information, its reliability, build logical conclusions based on incoming information and data.	GC-12.1 Searches for the necessary sources of information and data, perceives, analyzes, memorizes and transmits information using digital means, as well as using algorithms when working with data received from various sources in order to effectively use the information received to solve problems
		GC-12.2 Evaluates information, its reliability, builds logical conclusions based on incoming information and data.
GPC-1	The ability to determine the biological status and normative clinical indicators of organs and systems of the animal body.	GPC-1.1 Knows the structure and functions of the main systems of the animal body, taking into account species characteristics
		GPC-1.2 Capable of predicting the expected violations of the biological status in case of suspected development of diseases
		GPC-1.3 Is able to 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 Skilled in taking samples of biological fluids and tissues for research, performing laboratory tests, interpreting research results.
GPC-2	The ability to interpret and evaluate	GPC-2.1 Has knowledge of the impact of

	in professional activities the impact on the physiological state of the animal organism of natural, socio-economic, genetic and economic factors.	natural, socio-economic, genetic and economic factors on the animal body
		GPC-2.2 Able to establish the presence and reliability of causal relationships between the impact of individual etiological factors on the animal's body and the development of diseases
		GPC-2.3 Owns methods of preventive and therapeutic correction of the impact of adverse environmental factors that can cause a deterioration in animal health
GPC-4	The ability to use in professional activities methods of solving problems using modern equipment in the development of new technologies and use modern professional methodology to conduct experimental studies and interpret their results.	GPC-4.1 Owns the conceptual and methodological apparatus of the basic natural sciences at a level sufficient for full-fledged professional activity at the modern level
		GPC-4.2 Owns methods for solving problems using modern equipment
		GPC-4.3 Ready to use modern methodology in the development and conduct of experimental studies
		GPC-4.4 Uses modern professional methodology when interpreting research results
GPC-3	The ability to carry out and improve professional activities in accordance with regulatory legal acts in the field of agro-industrial complex	GPC-3.1 Knows modern legal norms, both state and international, regulating activities in the field of veterinary medicine, veterinary and sanitary examination and agro-industrial complex
		GPC-3.2 Has the skills to update legal information, including in the field of agro-industrial complex
		GPC-3.3 Carries out activities in accordance with the regulatory legal acts in the field of agro-industrial complex, as well as in the field of veterinary medicine and veterinary and sanitary examination
GPC-4	The ability to use in professional activities methods of solving problems using modern equipment in the development of new technologies and use modern professional methodology to conduct experimental studies and interpret their results.	GPC-4.1 Owns the conceptual and methodological apparatus of the basic natural sciences at a level sufficient for full-fledged professional activity at the modern level
		GPC-4.2 Owns methods for solving problems using modern equipment
		GPC-4.3 Ready to use modern methodology in the development and conduct of experimental studies
		GPC-4.4 Uses modern professional methodology when interpreting research results
GPC-7	Able to understand the principles of operation of modern information technologies and use them to solve problems of professional activity.	GPC-7.1 Understands the principles of operation of modern computer equipment and telecommunications and knows how to use them to solve professional problems
		GPC-7.2 Uses modern special software and specialized databases to solve professional problems and perform job duties
		GPC-7.3 Has the skills to work on modern medical diagnostic and treatment equipment with software
		GPC-7.4 Uses specialized databases to solve

		professional problems in the field of diagnostics and treatment of animals of various species
		GPC-7.5 Uses geographic information systems and software systems in the collection and analysis of information related to the assessment of the spread of infectious diseases, epizootic situations, planning and evaluating the effectiveness of anti-epizootic measures
PC-1	The ability to collect an anamnesis of the life and disease of animals to identify the causes of diseases and their nature	PC-1.1 Able to collect an anamnesis of the animal's life and reflect this in the relevant service documentation
		PC-1.2 Able to collect anamnesis of the animal's disease and reflect it in the patient's medical history
		PC-1.3 Able to identify possible causes of disease in an animal, factors predisposing to the disease and concomitant conditions that affect the nature of the course of the disease and use this information when making a diagnosis
PC-2	The ability to conduct a general clinical study of animals in order to establish a preliminary diagnosis and determine a further research program, as well as in accordance with the plan of anti-epizootic measures, the plan for the prevention of non-communicable animal diseases	PC-2.1 Able to conduct a general clinical study of animals of different species in order to establish a preliminary diagnosis and determine a further research program
		PC-2.2 Able to conduct mass clinical trials of animals in accordance with the plan of anti-epizootic measures, the plan for the prevention of non-communicable animal diseases

### 3. INTERNSHIP IN HIGHER EDUCATION PROGRAMME STRUCTURE

The internship refers to the core component of (B2) block of the higher educational programme curriculum.

The core component includes all introductory field internships, the variable component includes all advanced field internships, except for research and pre-graduate types of the internship. The elective module includes all research and pre-graduation types of the internship (if any).

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

*Table 3.1. The list of the higher education programme components that contribute to the achievement of the expected learning outcomes as the internship results.*

Competence code	Competence descriptor	Previous courses/modules, internships*	Subsequent courses/modules, internships*
GC-1	The ability to carry out a critical analysis of problem situations based on a	History Philosophy Maths	

	systematic approach, to develop an action strategy		
GC-2	Ability to manage a project at all stages of its life cycle	Introduction to the specialty Law science Coursework Animal Welfare	
GC-3	Ability to organize and manage the work of a team, developing a team strategy to achieve the goal	Introduction to the specialty Basics of professional ethics	Fundamentals of Rhetoric and Communication Communication workshop
GC-4	The ability to communicate in interpersonal and intercultural interaction in Russian as a foreign and foreign language(s) based on the possession of interrelated and interdependent types of reproductive and productive foreign language speech activities, such as listening, speaking, reading, writing and translating in everyday life, sociocultural, educational, professional, official, business and scientific spheres of communication	Foreign language Foreign language for special purposes Foreign language. Translation of special texts	Foreign language. Professional communications
GC-5	Ability to analyze and take into account the diversity of cultures in the process of intercultural interaction	History of Russia	Basics of social and legal knowledge Veterinary deontology
GC-6	The ability to determine and implement the priorities of one's own activity and ways to improve it based on self-assessment and lifelong learning	Introduction to the specialty	Psychology of personality and professional self-determination Career Management
GC-8	The ability to create and maintain safe living conditions in everyday life and in professional activities to preserve the natural environment, ensure the sustainable development of society, including in the event of a threat and the occurrence of emergencies and	Inorganic and Analytical Chemistry Organic chemistry biological physics Life safety Veterinary microbiology and mycology Virology and biotechnology General and veterinary	

	military conflicts	ecology Veterinary radiobiology	
GC-9	The ability to make informed economic decisions in various areas of life	Basics of professional ethics	Basics of social and legal knowledge Veterinary deontology
GC-10	The ability to form an intolerant attitude towards corrupt behavior	Basics of Economics and Management	Economics and organization of agricultural production
GC-11	The ability to form an intolerant attitude towards corrupt behavior.	Law science	
GC-12	The ability to search for the necessary sources of information and data, perceive, analyze, memorize and transmit information using digital means, as well as using algorithms when working with data obtained from various sources in order to effectively use the information received to solve problems; evaluate information, its reliability, build logical conclusions based on incoming information and data.	Informatics Maths	Biometrics
GPC-1	The ability to determine the biological status and normative clinical indicators of organs and systems of the animal body.	Animal anatomy pathological physiology Operative surgery with topographic anatomy Clinical diagnostics	Animal physiology Clinical laboratory diagnostics Laboratory diagnostics of infectious and parasitic diseases
GPC-2	The ability to interpret and evaluate in professional activities the impact on the physiological state of the animal organism of natural, socio-economic, genetic and economic factors	Biology with the basics of ecology Veterinary genetics Animal health and welfare Coursework Animal Health and Welfare Breeding with the basics of private zootechnics Feeding animals with the basics of feed production General and veterinary ecology animal health	Space technologies in the service of the agro-industrial complex

GPC-3	The ability to carry out and improve professional activities in accordance with regulatory legal acts in the field of agro-industrial complex	Law science	Organization of veterinary business
GPC-4	The ability to use in professional activities methods of solving problems using modern equipment in the development of new technologies and use modern professional methodology to conduct experimental studies and interpret their results.	Mathematics Inorganic and Analytical Chemistry Organic chemistry Physical and colloidal chemistry biological physics biological chemistry Immunology	Veterinary and manufacturing laboratories with design basics
GPC-7	Able to understand the principles of operation of modern information technologies and use them to solve problems of professional activity.	Computer science	Instrumental diagnostics Biometrics in veterinary medicine Organization of state veterinary supervision
PC-1	The ability to collect an anamnesis of the life and disease of animals to identify the causes of diseases and their nature	Clinical diagnostics	Equine diseases Diseases of productive animals Diseases of small animals Diseases of small pets Diseases of bees and entomophages Fish pathology and aquaculture Diseases of exotic animals
PC-2	Ability to conduct a general clinical study of animals in order to establish a preliminary diagnosis and determine a further research program, as well as in accordance with the plan of anti-epizootic measures, the plan for the prevention of non-communicable animal diseases	Clinical diagnostics	Equine diseases Diseases of productive animals Diseases of small animals Diseases of small pets Diseases of bees and entomophages Fish pathology and aquaculture Diseases of exotic animals

#### 4. INTERNSHIP WORKLOAD

The total workload of the educational practice "**Pharmacology, clinical diagnostics, pathological anatomy**" is 3 credits (108 academic hours).

## 5. INTERNSHIP CONTENTS

*Table 5.1. Internship contents\**

Modules	Contents (topics, types of practical activities)	Workload, academic hours
Module 1. Pharmacology	Laboratory practice	10
	Excursion practice	10
	Field practice	10
Module 2 Clinical Diagnosis	Laboratory practice	15
	Excursion practice	15
Module 3. Pathological anatomy	Laboratory practice	15
	Museum practice	15
Writing an internship report		9
Preparing for defence and defending the internship report		9
<b>TOTAL:</b>		<b>108</b>

\* - The contents of internship through modules and types of practical activities shall be FULLY reflected in the student's internship report.

## 6. INTERNSHIP EQUIPMENT AND TECHNOLOGY SUPPORT REQUIREMENTS

The infrastructure and technical support necessary for the internship implementation include: laboratories/ specially equipped classrooms/ polygons/ measuring and computing complexes/ vehicles/ industrial equipment and devices/ household premises that comply with current sanitary and fire safety standards.

The SAFETY REQUIREMENTS at the enterprise, workplace (including the department of RUDN University) and during the work with certain production/laboratory equipment incorporate/ include the following:

Equipped laboratory classrooms:

- Lecture hall.
- Proseitory.
- Sectional room for autopsy of cadaveric material.
- Premises for preparation and storage of fixed cadaveric material.
- Refrigerator for storage of cadaveric material.
- Pathological Anatomical Museum

• Equipment:

- Medicines for work
- Exhibition of veterinary drugs
- Educational demonstration tables,
- Scheme,
- Instruments for inspection, percussion, auscultation and thermometry of animals;
- Laboratory glassware, reagents and consumables;
- Tools for post-mortem examination of animal corpses - knives, tweezers, scalpels, scissors of all kinds, hammers, saws, etc.

- Microscopes.
- Demonstration microscopes with a video camera.
- Stereoscopic and binocular loupes.
- Tables with a special covering, screw stools.
- Multimedia settings.
- Preparations that provide the educational process:
  - Collection of museum micropreparations.
  - Wet museum macropreparations.
  - Demonstration tables and diagrams on the topics of lectures and practical exercises.
- A multimedia collection of macro- and micropreparations characterizing pathological processes, animal diseases.

## **7. INTERNSHIP LOCATION AND TIMELINE**

The internship can be carried out at the structural divisions of RUDN University (at Moscow-based organisations, as well as those located outside Moscow).

The internship at an external organisation (outside RUDN University) is legally arranged on the grounds of an appropriate agreement, which specifies the terms, place and conditions for an internship implementation at the organisation.

The period of the internship, as a rule, corresponds to the period indicated in the training calendar of the higher education programme. However, the period of the internship can be rescheduled upon the agreement with the Department of Educational Policy and the Department for the Organization of Internship and Employment of RUDN students.

## **8. RESOURCES RECOMMENDED FOR INTERNSHIP**

*Main reading:*

1. Circulation and quality control of medicinal products for veterinary use in the territory of the Russian Federation: teaching aid / Yu.A. Vatnikov, M.I. Shopinskaya, S.G. Drukovsky, E.V. Kulikov. - Electronic text data. - Moscow: RUDN University, 2021. - 37 p.  
[http://lib.rudn.ru/MegaPro/UserEntry?Action=Rudn\\_FindDoc&id=494768&idb=0](http://lib.rudn.ru/MegaPro/UserEntry?Action=Rudn_FindDoc&id=494768&idb=0)
2. Quality control and veterinary and sanitary examination of raw materials of animal origin, feed and medicines for animals: textbook / I.R. Smirnova, V.P. Yaremchuk, L.P. Satyukova, M.I. Shopinskaya. - Electronic text data. - St. Petersburg: Kvadro, 2020. - 188 p.  
[http://lib.rudn.ru/MegaPro/UserEntry?Action=Rudn\\_FindDoc&id=487455&idb=0](http://lib.rudn.ru/MegaPro/UserEntry?Action=Rudn_FindDoc&id=487455&idb=0)
3. Veterinary pharmacology. Dictionary-reference book: textbook for universities / A. V. Shadskaya, S. V. Kuznetsov, N. V. Sakhno, R. F. Kapustin. - St. Petersburg: Lan, 2020. - 136 p. <https://e.lanbook.com/book/152613>
4. Lavrinenkova, A. N. A course of lectures on veterinary pharmacology: a course of lectures / A. N. Lavrinenkova. - Bryansk: Bryansk State Agrarian University,

2018. - 104 p. <https://e.lanbook.com/book/133070>

5. Usha Boris Veniaminovich. Clinical diagnosis of internal non-communicable diseases of animals / B.V. Usha, I.M. Belyakov, R.P. Pushkarev. - Electronic text data. - St. Petersburg: Kvadro, 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)

6. Usha Boris Veniaminovich. Propaedeutics of internal non-communicable diseases of animals / B.V. Usha, I.M. Belyakov. - Electronic text data. - St. Petersburg: Kvadro, 2020. - 474 p. [http://lib.rudn.ru/MegaPro/UserEntry?Action=Rudn\\_FindDoc&id=487539&idb=0](http://lib.rudn.ru/MegaPro/UserEntry?Action=Rudn_FindDoc&id=487539&idb=0)

7. Ivanov A.A. Clinical laboratory diagnostics: 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)

8. Internal diseases of animals. For vocational schools: a textbook for vocational education / G. G. Shcherbakov, A. V. Yashin, S. P. Kovalev, S. V. Vinnikova. - 6th ed., erased. - St. Petersburg: Lan, 2021. - 496 p. <https://e.lanbook.com/book/156408>

9. Clinical diagnostics in veterinary medicine: textbook / compiled by N. A. Bashkatov. - Persianovsky: Donskoy GAU, 2020. - 161 p. <https://e.lanbook.com/book/148538>

10. Pathological physiology and pathological anatomy of animals: textbook / A. V. Zharov, L.N. Adamushkina, T.V. Losev, A.P. Strelnikov; Ed. A.V. Zharova. - 4th ed., erased. - St. Petersburg. : Publishing house "Lan", 2018. - 416 p. [http://lib.rudn.ru/MegaPro/UserEntry?Action=Rudn\\_FindDoc&id=464906&idb=0](http://lib.rudn.ru/MegaPro/UserEntry?Action=Rudn_FindDoc&id=464906&idb=0)

11. Baimatov V.N. Workshop on pathological physiology + CD: textbook / V.N. Baimatov. - 2nd ed., erased. - St. Petersburg. : Publishing house "Lan", 2017. - 352 p. [http://lib.rudn.ru/MegaPro/UserEntry?Action=Rudn\\_FindDoc&id=464947&idb=0](http://lib.rudn.ru/MegaPro/UserEntry?Action=Rudn_FindDoc&id=464947&idb=0)

12. Televova, N. R. Pathological physiology. Section Typical pathological processes: teaching aid / N. R. Televova, F. G. Astarkhanov, F. N. Dagirova. - Makhachkala: DagGAU named after M.M. Dzhambulatov, 2020. - 58 p. <https://e.lanbook.com/book/159426>

13. Pathological physiology and pathological anatomy of animals: a textbook for universities / A. V. Zharov, L. N. Adamushkina, T. V. Loseva, A. P. Strelnikov; edited by A. V. Zharov. - 7th ed., Sr. - St. Petersburg: Lan, 2021. - 416 p. <https://e.lanbook.com/book/159515>

14. Zharov, A. V. Pathological anatomy of animals: a textbook for universities / A. V. Zharov. - 3rd ed., erased. - St. Petersburg: Lan, 2021. - 604 p. <https://e.lanbook.com/book/164712>

*Additional reading:*

1. Veterinary pharmacology. Toxicology. Antibiotics. Modern classification (registry of 2017): guidelines / compiled by E. S. Tkacheva. - Vologda: VGMHA im. N.V. Vereshchagin, 2018. - 36 p.  
<https://e.lanbook.com/book/130882>
2. Karmaliev, R. S. Veterinary pharmacology: textbook / R. S. Karmaliev. - Uralsk: ZKATU im. Zhangir Khan, 2016. - 264 p.  
<https://e.lanbook.com/book/147888>
3. Prevention of infectious animal diseases by aerosols of chemical and biological preparations: monograph / A.T. Kushnir, I.A. Bureev, Yu.O. Selyaninov [i dr.]. - St. Petersburg. : Publishing house "Lan", 2016. - 192 p.  
[http://lib.rudn.ru/MegaPro/UserEntry?Action=Rudn\\_FindDoc&id=465095&idb=0](http://lib.rudn.ru/MegaPro/UserEntry?Action=Rudn_FindDoc&id=465095&idb=0)
4. Sokolov, V. D. Pharmacology: textbook / V. D. Sokolov. - 4th ed., Rev. and additional - St. Petersburg: Lan, 2013. - 576 p.  
<https://e.lanbook.com/book/10255>
5. Clinical diagnosis of internal animal diseases: textbook / S.P. Kovalev, A.P. Kurdeko, E.L. Bratushkina [i dr.]. - 2nd ed., revised. - St. Petersburg. : Publishing house "Lan", 2016. - 544 p.  
[http://lib.rudn.ru/MegaPro/UserEntry?Action=Rudn\\_FindDoc&id=465083&idb=0](http://lib.rudn.ru/MegaPro/UserEntry?Action=Rudn_FindDoc&id=465083&idb=0)
6. Clinical gastroenterology of animals: textbook / I.I. Kalyuzhny, G.G. Shcherbakov, A.V. Yashin [i dr.]. - 2nd ed., corrected. - St. Petersburg. : Publishing house "Lan", 2015. - 448 p.  
[http://lib.rudn.ru/MegaPro/UserEntry?Action=Rudn\\_FindDoc&id=465124&idb=0](http://lib.rudn.ru/MegaPro/UserEntry?Action=Rudn_FindDoc&id=465124&idb=0)
7. Seleznev S.B. Clinical morphology of the pancreas of dogs in ultrasound diagnostics / S.B. Seleznev, D.I. Esina, E.V. Kulikov // Bulletin of the Peoples' Friendship University of Russia: Agronomy and animal husbandry. - 2014. - No. 2. - P. 39 - 50.  
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10. Pathological physiology and pathological anatomy of animals: textbook / A.V. Zharov, L.N. Adamushkina, T.V. Losev, A.P.

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11. Savinkov, A. V. Pathological physiology: textbook / A. V. Savinkov,  
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Kalyuzhny, S. P. Ubirayev, G. G. Shcherbakov [and others]; edited by I. I.  
Kalyuzhny. - St. Petersburg: Lan, 2019. - 192 p.  
<https://e.lanbook.com/book/113388>

#### *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/>
- .....

*The training toolkit and guidelines for a student to do an internship, keep an  
internship diary and write an internship report\*:*

1. Safety regulations to do the internship (safety awareness briefing).
2. Machinery and principles of operation of technological production equipment  
used by students during their internship; process flow charts, regulations, etc. (if  
necessary).
3. Guidelines for keeping an internship diary and writing an internship report.

\*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 INTERNSHIP RESULTS**

The assessment toolkit and the grading system\* to evaluate the level of competences (competences in part) formation as the internship results are specified in the Appendix to the internship 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).

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Position, Educational Department

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