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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

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

INTERNSHIP SYLLABUS

Biology with Basic Ecology and Introduction to Specialty

internship title

Educational

internship type

Recommended by the Didactic Council for the Education Field of:

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:

Veterinary

higher education programme profile/specialisation title

1. INTERNSHIP GOAL(s)

The goal of the Internship "**Biology with Basic Ecology and Introduction to Specialty**" is to consolidate the theoretical knowledge and practical skills and abilities gained in the study of the disciplines "**Biology with Basic Ecology**" and "**Introduction to Specialty**", mastering the following methods: collecting living objects in nature, biological observations, identification of insects; identification of species of mammals and birds by skulls, skins and museum stuffed animals, the study of aquatic fauna, as well as familiarization with the diversity of the fauna of Russia and adjacent territories. Acquaintance with various aspects of the activities of veterinarians, the formation of interest in the study of disciplines of subsequent courses.

2. REQUIREMENTS FOR LEARNING OUTCOMES

The internship "**Biology with Basic Ecology and Introduction to Specialty**" 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	Ability to carry out critical analysis of problem situations based on a systems approach and develop a strategy for action.	GC-1.1. Analyzes the task by identifying 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 using various types of queries; GC-1.4. Proposes possible solutions and analyzes the potential consequences of their implementation; GC-1.5. Analyzes ways of solving worldview, moral and personal problems using the main philosophical ideas and categories in their historical development and socio-cultural context.
GC-10	Ability to make informed economic decisions in various areas of life.	GC-10.1. Understands basic principles of economic functioning and development and the role of the state in the economy; GC-10.2. Applies methods of personal financial planning to achieve short- and long-term goals; GC-10.3. Uses financial instruments to manage personal finances and control economic risks.

GC-11	Ability to develop intolerance towards corruption behavior.	GC-11.1. Analyzes legal regulations ensuring anti-corruption measures and prevention mechanisms; GC-11.2. Plans and implements activities promoting civic responsibility and preventing corruption; GC-11.3. Observes legal norms and principles of intolerance to corruption in social interaction.
GC-12	Ability to search for information sources and data, perceive, analyze, store and transmit information using digital tools and algorithms for effective problem solving and evaluation of information reliability.	GC-12.1. Searches, analyzes and processes information from various sources using digital technologies and algorithms; GC-12.2. Evaluates information reliability and draws logical conclusions based on incoming data
GC-2	Ability to manage a project at all stages of its life cycle.	GC-2.1. Formulates a problem whose solution is directly related to achieving the project goal; GC-2.2. Determines the relationships between tasks and the expected results of their solution; GC-2.3. Identifies available resources, constraints and applicable legal regulations within the assigned tasks; GC-2.4. Analyzes the project schedule and selects the optimal way to accomplish the tasks considering legal norms, available resources and constraints; GC-2.5. Monitors project implementation and adjusts the schedule according to monitoring results.
GC-3	Ability to organize and lead a team, developing a team strategy to achieve the set goal.	GC-3.1. Determines his/her role in the team based on the cooperation strategy for achieving the goal; GC-3.2. Identifies and considers behavioral characteristics of groups depending on the set goal; GC-3.3. Analyzes possible consequences of personal actions and plans actions to achieve the required result; GC-3.4. Exchanges information, knowledge and experience with team members; GC-3.5. Substantiates his/her viewpoint regarding the use of ideas of other team members to achieve the goal;

		GC-3.6. Participates in teamwork to accomplish assigned tasks.
GC-4	Ability to communicate in interpersonal and intercultural interaction in Russian as a foreign language and foreign language(s) based on mastery of interconnected receptive and productive language activities (listening, speaking, reading, writing and translation) in everyday, socio-cultural, educational-professional, official-business and scientific communication.	GC-4.1. Chooses the style of business communication depending on the language of communication, purpose and conditions of interaction; GC-4.2. Adapts speech, communication style and body language to interaction situations; GC-4.3. Searches for information necessary to solve standard communication tasks in Russian and foreign languages; GC-4.4. Translates 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 stylistic features of formal and informal letters and sociocultural differences; GC-4.6. Uses dialogue for cooperation in academic communication considering communicative strategies, tactics and the level of formality; GC-4.7. Forms and substantiates personal evaluation of key ideas expressed in dialogue (discussion) in accordance with the needs of joint activities.
GC-5	Ability to analyze and take into account cultural diversity in the process of intercultural interaction.	GC-5.1. Interprets the history of Russia in the context of global historical development; GC-5.2. Finds and uses information about cultural features and traditions of different social groups in social and professional communication; GC-5.3. Considers historical heritage and socio-cultural traditions of various social groups, ethnicities and confessions including world religions and philosophical teachings; GC-5.4. Collects information on the given topic considering ethnic and confessional diversity in research locations; GC-5.5. Justifies features of project and teamwork with representatives of other ethnic

		groups and/or confessions; GC-5.6. Adheres to principles of non-discriminatory interaction in personal and public communication.
GC-6	Ability to determine and implement priorities of personal activity and ways of its improvement 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 of time management for tasks, projects and goals; GC-6.3. Analyzes personal resources and their limits (personal, situational, time-related, etc.); GC-6.4. Finds and uses additional information sources to improve general and professional knowledge; GC-6.5. Analyzes opportunities and tools of lifelong learning in accordance with personal interests and labour market requirements; GC-6.6. Defines self-development objectives and professional growth priorities; GC-6.7. Distributes tasks into long-, medium- and short-term.
GC-8	Ability to create and maintain safe living conditions in everyday life and professional activities to preserve the environment and ensure sustainable development of society, including in emergency situations and military conflicts.	GC-8.1. Analyzes harmful environmental factors affecting human activity; GC-8.2. Identifies hazardous and harmful factors in performed tasks; GC-8.3. Identifies and eliminates workplace safety violations; GC-8.4. Explains measures for emergency prevention; GC-8.5. Explains rules of conduct in natural, technological emergencies and military conflicts; GC-8.6. Provides first aid and participates in recovery activities.
GC-9	Ability to use basic defectology knowledge in social and professional activities.	GC-9.1. Demonstrates understanding of principles of non-discriminatory communication considering psychological characteristics of persons with disabilities; GC-9.2. Plans and carries out professional activities with persons with disabilities; GC-9.3. Interacts with persons with disabilities in social and professional environments.

GPC-1	Ability to determine the biological status and normative clinical indicators of organs and systems of the animal organism.	GPC-1.1. Knows the structure and functions of the main body systems of animals taking into account species-specific features; GPC-1.2. Is able to predict expected disturbances of biological status when the development of diseases is suspected; GPC-1.3. Is able to determine the main indicators of the functioning of individual body systems and draw conclusions about deviations from normative values; GPC-1.4. Possesses skills in sampling biological fluids and tissues for research, conducting laboratory tests and interpreting research results.
GPC-2	Ability to interpret and assess the influence of natural, socio-economic, genetic and economic factors on the physiological state of animals in professional activities.	GPC-2.1. Possesses knowledge about the influence of natural, socio-economic, genetic and economic factors on the animal organism; GPC-2.2. Is able to establish the presence and reliability of cause-and-effect relationships between the impact of individual etiological factors on the animal organism and the development of diseases; GPC-2.3. Possesses methods of preventive and therapeutic correction of adverse environmental factors that may cause deterioration of animal health.
GPC-3	Ability to carry out and improve professional activities in accordance with regulatory legal acts in the field of the agro-industrial complex.	GPC-3.1. Knows modern legal regulations, both national and international, governing activities in veterinary medicine, veterinary and sanitary expertise and the agro-industrial complex; GPC-3.2. Possesses skills in updating legal information, including in the agro-industrial complex; GPC-3.3. Carries out activities in accordance with regulatory legal acts in the agro-industrial complex, as well as in the field of veterinary medicine and veterinary and sanitary expertise.
GPC-4	Ability to use methods for solving professional tasks with modern equipment when developing new technologies and	GPC-4.1. Possesses the conceptual and methodological apparatus of basic natural sciences sufficient for

	to apply modern professional methodology for conducting experimental research and interpreting its results.	professional activity at a modern level; GPC-4.2. Possesses methods for solving tasks using modern equipment; GPC-4.3. Is ready to apply modern methodology in the development and implementation of experimental research; GPC-4.4. Uses modern professional methodology in the interpretation of research results.
GPC-7	Ability to understand the principles of operation of modern information technologies and use them to solve professional tasks.	GPC-7.1. Understands the principles of operation of modern computer equipment and telecommunications tools and is able to use them to solve professional tasks; GPC-7.2. Uses modern specialized software and databases to solve professional tasks and perform professional duties; GPC-7.3. Possesses skills in operating modern medical diagnostic and therapeutic equipment with software support; GPC-7.4. Uses specialized databases for solving professional tasks in the field of diagnosis and treatment of animals of different species; GPC-7.5. Uses geographic information systems and software tools when collecting and analyzing information related to the spread of infectious diseases, epizootic situations and planning and evaluating anti-epizootic measures.
PC-1	Ability to collect the life and medical history of an animal for further diagnosis and planning of therapeutic and preventive measures.	PC-1.1. Collects information on the animal's life history, including scheduled vaccinations, deworming and other preventive treatments. PC-1.2. Collects information on previous diseases, surgical interventions, existing chronic diseases and ongoing therapy. PC-1.3. Collects information on changes in the animal's condition during the course of disease, diagnostic and therapeutic procedures performed, medications used and physiotherapy methods.

PC-2	Ability to perform a complete primary clinical examination of an animal to establish a preliminary clinical diagnosis and repeated examinations to monitor the patient's condition.	PC-2.1. Complies with the techniques and procedures of clinical examination taking into account the animal species and its condition. PC-2.2. Identifies signs (symptoms) of deviations from normal function and recognizes standard combinations of signs (syndromes). PC-2.3. Records examination results in the patient's medical record or other medical documentation. PC-2.4. Assesses the initial degree of clinical symptom manifestation and its changes during patient supervision.
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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 disciplines/modules, practices	Subsequent courses/modules, internships*
GC-1	Ability to carry out critical analysis of problem situations based on a systems approach and develop a strategy for action.	Maths; Digital Literacy;	
GC-10	Ability to make informed economic decisions in various areas of life.		
GC-11	Ability to develop intolerance towards corruption behavior.	Law Science	
GC-12	Ability to search for information sources and	Maths; Digital Literacy;	Biometrics, Biostatistics and Data

	data, perceive, analyze, store and transmit information using digital tools and algorithms for effective problem solving and evaluation of information reliability.		Analysis in Veterinary Medicine;
GC-2	Ability to manage a project at all stages of its life cycle.	Law Science; Introduction to Specialty;	
GC-3	Ability to organize and lead a team, developing a team strategy to achieve the set goal.	Introduction to Specialty; Political Science; Russian Language and Culture of Speech;	
GC-4	Ability to communicate in interpersonal and intercultural interaction in Russian as a foreign language and foreign language(s) based on mastery of interconnected receptive and productive language activities (listening, speaking, reading, writing and translation) in everyday, socio-cultural, educational-professional, official-business and scientific communication.	Foreign Language**; Russian as a Foreign Language**; Russian Language for Foreign Students;	Professional Foreign Language**; Russian Language for Foreign Students; Professional Russian Language**;
GC-5	Ability to analyze and take into account cultural diversity in the process of intercultural interaction.	History of Russia; History of Religions in Russia; Fundamentals of Russian Statehood;	Veterinary Deontology;
GC-6	Ability to determine and implement priorities of personal activity and ways of its improvement based on self-assessment and lifelong learning.	Introduction to Specialty;	
GC-8	Ability to create and maintain safe living conditions in everyday life and professional activities to preserve the environment and ensure sustainable development of society, including in emergency situations and military conflicts.	Inorganic and Analytical Chemistry; Organic Chemistry; Biology with Basic Ecology; Basic Military Training. Life Safety;	
GC-9	Ability to use basic defectology knowledge in social and professional activities.		Veterinary Deontology;

GPC-1	Ability to determine the biological status and normative clinical indicators of organs and systems of the animal organism.	Anatomy of Animals;	Clinical Industrial Practice; Industrial Research Practice; Laboratory Diagnostics with Elements of Artificial Intelligence Technology;
GPC-2	Ability to interpret and assess the influence of natural, socio-economic, genetic and economic factors on the physiological state of animals in professional activities.	Biology with Basic Ecology; Veterinary Genetics;	Clinical Industrial Practice; Industrial Research Practice;
GPC-3	Ability to carry out and improve professional activities in accordance with regulatory legal acts in the field of the agro-industrial complex.	Law Science;	Organization of Veterinary Management with the Basics of Project Activities; Clinical Industrial Practice; Industrial Research Practice;
GPC-4	Ability to use methods for solving professional tasks with modern equipment when developing new technologies and to apply modern professional methodology for conducting experimental research and interpreting its results.	Inorganic and Analytical Chemistry; Organic Chemistry; Biophysics; Physical and Colloidal Chemistry; Maths; Biology with Basic Ecology;	Clinical Industrial Practice; Industrial Research Practice; Small Animal Diseases;
GPC-7	Ability to understand the principles of operation of modern information technologies and use them to solve professional tasks.	Digital Literacy;	Clinical Industrial Practice; Industrial Research Practice; Organization of Veterinary Management with the Basics of Project Activities; Biometrics, Biostatistics and Data Analysis in Veterinary Medicine;
PC-1	Ability to collect the life and medical history of an animal for further diagnosis and planning of therapeutic and preventive measures.		Clinical Industrial Practice; Industrial Research Practice; Equine Diseases**; Diseases of Farm Animals**; Small Animal

			Diseases**; Bee Diseases and Entomophages**; Exotic Animal Diseases**;
PC-2	Ability to perform a complete primary clinical examination of an animal to establish a preliminary clinical diagnosis and repeated examinations to monitor the patient's condition.		Equine Diseases**; Diseases of Farm Animals**; Small Animal Diseases**; Bee Diseases and Entomophages**; Exotic Animal Diseases**; Clinical Industrial Practice; Industrial Research Practice;

4. INTERNSHIP WORKLOAD

The total workload of the internship "**Biology with the basics of ecology and an introduction to the specialty**" 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. Biology with the basics of ecology	Laboratory practice	15
	Museum practice	15
	Field practice	15
Module 2. Introduction to the specialty	Excursion practice in the clinic for small animals	12
	Excursion practice in the clinic for large animals	11
	Excursion to the agricultural enterprise	11
	Excursion to the laboratory	11
Writing an internship report		9
Preparing for defence and defending the internship report		9
TOTAL:		108

* 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 rooms
- Equipment:
 - o Multimedia settings
 - o Light optical microscopes,
 - o Stereoscopic binoculars,
 - o Educational demonstration tables,
 - o Posters,
 - o Stands and diagrams for the zoological description of animals,
 - o Micropreparations,
 - o Laboratory glassware,
 - o Nets for catching insects,
 - o Dissecting needles,
 - o Excursion zoological bucket with mesh lid,
 - o Stain for terrestrial insects,
 - o Study tables,
 - o Living plant material,
 - o Collections of fixed generative and vegetative plant organs,
 - o Educational herbarium.

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. Biology with the basics of ecology: a textbook / V. M. Tsarevskaya, M. V. Kovalenko, E. Kh. Nechaeva, N. A. Melnikova. - Samara: SamGAU, 2018. - 125 p. <https://eJanbook.com/book/109418>
2. Kolesnikova, I. Ya. Biology with the basics of ecology: teaching aid / I. Ya. Kolesnikova. - Yaroslavl: Yaroslavl State Agricultural Academy, 2017. - 112 p. <https://eJanbook.com/book/131314>
3. Medvedeva, S. M. Biology with the basics of ecology: textbook / S. M. Medvedeva. - Voronezh: VSU, 2017. - 111 p. <https://eJanbook.com/book/154750>
4. Methodology of scientific research: a textbook for universities / N. A. Slesarenko, E. N. Borkhunova, S. M. Borunova [and others]; edited by N. A. Slesarenko. - 5th ed., revised. - St. Petersburg: Lan, 2021. - 268 p. <https://eJanbook.com/book/156383>
5. Tsarenko, P. P. Introduction to zootechnics: textbook / P. P. Tsarenko, A. F. Shevkhuzhev. - 2nd ed., revised. - St. Petersburg: Lan, 2019. - 300 p. <https://eJanbook.com/book/113146>
6. Dar'in, A. I. Guidelines for the implementation of the final qualification work: guidelines / A. I. Dar'in, G. V. Ilyina, V. V. Lyashenko. - Penza: PGAU, 2018. - 73 p. <https://eJanbook.com/book/131061>
7. Animal feeding and feed technology: textbook / N. I. Torzhkov, I. Yu. Bystrova, A. A. Korovushkin [and others]. - Ryazan: RGATU, 2019. - 163 p. <https://eJanbook.com/book/137432>

Additional reading:

1. Shabasheva, S. V. Biology with the basics of ecology: textbook / S. V. Shabasheva. - Kemerovo: KemGU, 2016. - 127 p. <https://e.lanbook.com/book/92382>
2. Novak, A. I. Biology with the basics of ecology: textbook / A. I. Novak, I. Yu. Bystrova, O. A. Fedosova. - Ryazan: RGATU, 2016. - 165 p. <https://e.lanbook.com/book/144268>
3. Shamsuvaleeva, E. Sh. Biology with the basics of ecology: textbook / E. Sh. Shamsuvaleeva. - Kazan: Povolzhskaya GAFKSiT, 2016. - 52 p. <https://e.lanbook.com/book/154940>
4. Biology with the basics of ecology: textbook / S. A. Nefedova, A. A. Korovushkin, A. N. Bachurin, E. A. Shashurina. — 2nd ed., corrected. - St. Petersburg: Lan, 2015. - 368 p. <https://e.lanbook.com/book/58167>
5. Nikitin, I. N. History of veterinary medicine: a textbook for military / I. N. Nikitin. - 4th ed., Rev. and additional - St. Petersburg: Lan, 2020. - 332 p.

<https://e.lanbook.com/book/143680>

6. Bondarenko, O. V. History and philosophy of science: textbook / O. V. Bondarenko, O. P. Ilyina. - Irkutsk: Irkutsk State Agrarian University, 2017. - 269 p.

<https://e.lanbook.com/book/133357>

7. Nikitin, I. N. Legal support of veterinary activities: a textbook for sports / I. N. Nikitin. - 2nd ed., revised. - St. Petersburg: Lan, 2021. - 212 p. <https://eJanbook.com/book/155692>

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

- EL "Lan" <http://eJanbook.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/>

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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).

DEVELOPERS:

Assistant of the Department of Veterinary Medicine

Position, Basic curriculum

Associate Professor of the Department of Veterinary

Position, Basic curriculum

Associate Professor of the Department of Veterinary

Position, Basic curriculum

Shuvalov N.A.

Full name.

Bolshakova M.V.

Full name.

Rystsova E.O.

Full name.

Signature

Signature

Signature

HEAD OF EDUCATIONAL DEPARTMENT:

Department of Veterinary Medicine

Name Basic Curriculum

Vatnikov Yu.A.

Full name.

Signature

HEAD OF HIGHER EDUCATION PROGRAMME:

Director of the Department of Veterinary Medicine

Position, Basic curriculum

Vatnikov Yu.A.

Full name

Signature