

Документ подписан простой электронной подписью  
Информация о владельце:  
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Должность: Ректор  
Дата подписания: 27.05.2026 16:12:57  
Уникальный программный ключ:  
ca953a0120d891083f939673078ef1a989dae18a

**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**

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**Biology with the Basics of Ecology**

course title

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**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 goal of the course "**Biology with basics ecology**" is to familiarize students with the theoretical background, terminology, and concepts of the discipline, study the structural and functional features, reproduction, patterns of development and relationships with the environment of the main groups of animals in the comparative anatomical, comparative functional, phylogenetic and evolutionary aspects, taking into account their practical importance for the veterinarian.

## 2. REQUIREMENTS FOR LEARNING OUTCOMES

Mastering the course (module) "**Biology with basics ecology**" 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*

Competence code	Competence descriptor	Competence formation indicators (within this course)
GPC-2	Able 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-4	Able to use methods for solving problems with modern equipment in professional activities, develop new technologies, and apply modern professional methodology for conducting experimental research and interpreting its results.	GPC-4.2 Possesses methods for solving problems using modern equipment.
		GPC-4.4 Applies modern professional methodology when interpreting research results.

## 3. COURSE IN HIGHER EDUCATION PROGRAMME STRUCTURE

The course "**Biology with basics ecology**" refers to the core 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*
GPC-2	Able to interpret and assess the influence of natural, socio-	Agroecology	Animal Breeding with Basics of Private Husbandry Animal Health and Welfare

Competence code	Competence descriptor	Previous courses/modules*	Subsequent courses/modules*
	economic, genetic, and economic factors on the physiological state of animals in professional activities.		Animal Nutrition and Feeding with Basics of Feed Production Veterinary Genetics Animal Health and Welfare Educational Practice Clinical Industrial Practice Clinical Internship Industrial Research Practice
GPC-4	Able to use methods for solving problems with modern equipment in professional activities, develop new technologies, and apply modern professional methodology for conducting experimental research and interpreting its results.	Maths	Educational Practice Clinical Industrial Practice Clinical Internship Industrial Research Practice

\* To be filled in according to the competence matrix of the higher education programme.

#### 4. COURSE WORKLOAD AND ACADEMIC ACTIVITIES

The total workload of the course «**Biology with basics ecology**» 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		
			1	-	-
<i>Contact academic hours</i>		34	34	-	-
including:					
Lectures (LC)		17	17	-	-
Lab work (LW)		17	17	-	-
Seminars (workshops/tutorials) (S)		-	-	-	-
<i>Self-studies</i>		29	29	-	-
<i>Evaluation and assessment (exam/passing/failing grade)</i>		9	9	-	-
<b>Course workload</b>	academic hours	<b>72</b>	<b>72</b>	-	-

Type of academic activities	Total academic hours	Semesters/training modules			
		1	-	-	-
credits	2	2	-	-	-

## 5. COURSE CONTENTS

*Table 5.1. Course contents and academic activities types*

Course module title	Course module contents (topics)	Academic activities types
Module 1. Invertebrate animals	Topic 1. Protozoa.	LC, LW
	Topic 1.2. Coelenterates.	LC, LW
	Topic 1.3. Flatworms.	LC, LW
	Topic 1.4. Roundworms.	LC, LW
	Topic 1.5. Ringed worms.	LC, LW
	Topic 1.6. Arthropods.	LC, LW
	Topic 1.7. Arachnids.	LC, LW
	Topic 1.8. Crustaceans.	LC, LW
	Topic 1.9. Insects.	LC, LW
	Topic 1.10. Shellfish.	LC, LW
Module 2. Vertebrate animals	Topic 2.1. Cartilaginous fish.	LC, LW
	Topic 2.2. Bony fish.	LC, LW
	Topic 2.3. Amphibians.	LC, LW
	Topic 2.4. Reptiles.	LC, LW
	Topic 2.5. Birds.	LC, LW
	Topic 2.6. Mammals.	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 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. Zoology with the basics of evolutionary teaching. Invertebrates : textbook / V.I. Podarueva, E.O. Rystsova, M.V. Bolshakova. - Electronic text data. - Moscow : PFUR, 2021. - 107 c.
2. Biology: textbook in 2 volumes. T. 2 / ed. by V.N. Yarygin. - Moscow : GEOTAR-Media, 2021. - 560 c. - Biology. T. 2 : textbook : in 2 vols / ed. by V. N. Yarygin. N. Yarygin. - Moscow : GEOTAR-Media, 2021.

### *Additional Readings:*

1. Biology with the Basics of Ecology / A.S. Lukatkin, A.B. Ruchin, T.B. Silaeva, S.V. Aparin et al. - M.: Academy, 2011. - 400 c.
2. Biology guide to practical exercises / Markina VV, Oborotistov JD, Tatarenko-Kozmina TY, Kolomiichenko ME, and others; ed. by Markina VV. - Moscow: GEOTAR-Med, 2010. - 448 c.
3. Sych V. F. General biology. Moscow: Academic Project, 2008. -336 c
4. Stepanovskikh, A.S. Biological ecology: theory and practice : textbook / A.S. Stepanovskikh. - Moscow : Unity-Dana, 2015. - 791 c. : ill. - Bibliography in the book - ISBN 978-5-238-01482-1 ; The same [Electronic resource]. - URL: <http://biblioclub.ru/index.php?page=book&id=119176>
1. Medvedsky V. A., Medvedskaya T. V. Agricultural ecology. Moscow: The Ministry of Finance, 2010. -416 c

### *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 "**Biology with basics ecology**"

## 2. The laboratory workshop (if any).on the course "**Biology with basics ecology**"

\* 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:**

Assistant of the Department of Veterinary Medicine

Shuvalov N.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