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

Agrarian and Technological Institute

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

COURSE SYLLABUS

Biology with the Basics of Ecology

course title

Recommended by the Didactic Council for the Education Field of:

36.05.01 Veterinary

field of studies / speciality code and title

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

Veterinary

higher education programme profile/specialisation title

2024

1. COURSE GOAL(s)

The goal of the course "**Biology with basics ecology**" is to 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 "**Biology with basics ecology**" 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**	**Indicators of competence accomplishment** (within the 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 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*
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.	Base component / Базовая компонента Агроэкология / Агроэкология	Animal Breeding with Basics of Private Husbandry / Разведение животных с основами частной зоотехнии Animal Health and Welfare / Здоровье и благополучие животных Animal Nutrition and Feeding with Basics of Feed Production / Кормление животных с основами кормопроизводства Variable component / Вариативная компонента Veterinary Genetics / Ветеринарная генетика Здоровье и благополучие животных / Animal Health and Welfare Base component / Базовая компонента Educational Practice / Учебная практика Variable component / Вариативная компонента Clinical Industrial Practice / Клиническая производственная практика Clinical Internship Industrial Research Practice / Производственно-исследовательская практика Preparation for Passing

			and Passing the State Exam / Подготовка к сдаче и сдача государственного экзамена Preparing and Passing the State Exam / Подготовка и сдача государственного экзамена Design, Preparation for Defense Procedure and Defense of the Graduation Thesis / Оформление, подготовка к процедуре защиты и защита выпускной квалификационной работы
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.	Base component / Базовая компонента Maths / Математика	Variable component / Вариативная компонента Base component / Базовая компонента Educational Practice / Учебная практика Variable component / Вариативная компонента Clinical Industrial Practice / Клиническая производственная практика Clinical Internship Industrial Research Practice / Производственно-исследовательская практика Preparation for Passing and Passing the State Exam / Подготовка к сдаче и сдача государственного экзамена Preparing and Passing

			the State Exam / Подготовка и сдача государственного экзамена Design, Preparation for Defense Procedure and Defense of the Graduation Thesis / Оформление, подготовка к процедуре защиты и защита выпускной квалификационной работы

4. COURSE WORKLOAD AND ACADEMIC ACTIVITIES

The total workload of the course «**Biology with basics ecology**" is 2 credits.

*Table 4.1. Types of academic activities during the period of the HE program mastering for **full-time** study*

Type of academic activities		**Total academic hours**	**Semesters/training modules**			
			1	**-**	**-**	**-**
Contact academic hours		34	34	-	-	-
including						
Lectures		17	17	-	-	-
Lab work		17	17	-	-	-
Seminars (workshops/tutorials)		-	-	-	-	-
Self-study		29	29	-	-	-
Evaluation and assessment (exam/pass/fail grading)		9	9	-	-	-
Course workload	academic hours	**72**	**72**	**-**	**-**	-
	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.	Lectures, Lab work
	Topic 1.2. Coelenterates.	Lectures, Lab work
	Topic 1.3. Flatworms.	Lectures, Lab

		work
	Topic 1.4. Roundworms.	Lectures, Lab work
	Topic 1.5. Ringed worms.	Lectures, Lab work
	Topic 1.6. Arthropods.	Lectures, Lab work
	Topic 1.7. Arachnids.	Lectures, Lab work
	Topic 1.8. Crustaceans.	Lectures, Lab work
	Topic 1.9. Insects.	Lectures, Lab work
	Topic 1.10. Shellfish.	Lectures, Lab work
Module 2. Vertebrate animals	Topic 2.1. Cartilaginous fish.	Lectures, Lab work
	Topic 2.2. Bony fish.	Lectures, Lab work
	Topic 2.3. Amphibians.	Lectures, Lab work
	Topic 2.4. Reptiles.	Lectures, Lab work
	Topic 2.5. Birds.	Lectures, Lab work
	Topic 2.6. Mammals.	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.	-
Laboratory	An auditorium for laboratory work, individual consultations, routine monitoring and interim certification, equipped with a set of specialized furniture and equipment.	-

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. 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
- 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 "**Biology with basics ecology**".
2. Laboratory workshop 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.

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).

DEVELOPERS:

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