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**PEOPLES' FRIENDSHIP UNIVERSITY OF RUSSIA**  
**NAMED AFTER PATRICE LUMUMBA**  
**Institute of Environmental Engineering**

(наименование основного учебного подразделения (ОУП)-разработчика ОП ВО)

## **COURSE SYLLABUS**

### **MODEM PROBLEMS OF ECOLOGY**

(наименование дисциплины/модуля)

#### **Recommended by the Methodological Council for the Education Field:**

**05.04.06 Ecology and nature management**

(код и наименование направления подготовки/специальности)

#### **The discipline is mastered within the framework of the main professional higher education program:**

**Economics of natural resources management**

(наименование (профиль/специализация) ОП ВО)

## 1. COURSE GOALS

The course goal is to develop students' understanding of the role, significance and limitations of the use of statistical methods in scientific and practical socio-economic and environmental research; to teach how to use methods for assessing the representativeness of the material, the volume of samples when conducting quantitative studies, statistical methods for comparing the data obtained and determining patterns; to form the skill of using modern computer tools for processing statistical data and in solving problems of future professional and scientific activities.

## 2. LEARNING OUTCOMES

The mastering of the discipline "Modern problems of Ecology" is aimed at the formation of the following competencies (parts of competencies) in students:

*Table 2.1. List of competencies formed by students during the development of the discipline (LEARNING OUTCOMES)*

Code	Competence	Indicators of competence achievement (within the framework of this discipline)
GC-4	Able to apply modern communication technologies, including in a foreign language(s) for academic and professional interaction	GC-4.1 able to establish contacts and organize communication in accordance with the needs of joint activities, using modern communication technologies
		GC -4.2 knows the basics of business documentation and uses professional vocabulary in foreign and Russian languages
		GC -4.3 able to organize discussion of results and present the results of research and project activities at various public events in Russian or a foreign language, choosing the most appropriate format
GC-5	Able to solve the problems of professional activity in the field of ecology, nature management and nature protection using information and communication, including geoinformation technologies	GC-5.1. knows the main categories of philosophy, the laws of historical development, the basics of intercultural communication
		GC-5.2 able to communicate in the world of cultural diversity and demonstrate mutual understanding between students from different cultures in compliance with ethical and intercultural norms

## 3. COURSE IN HIGHER EDUCATION PROGRAMME STRUCTURE

The discipline "Modern problems of Ecology" refers to Compulsory Disciplines of the Higher Education Program.

Within the framework of the higher education program, students also master other disciplines and/or practices that contribute to expected learning outcomes of the discipline "Modern problems of Ecology".

*Table 3.1. List of Higher Education Program components that contribute to expected learning outcomes*

Code	Competence	Previous Disciplines (Modules)	Subsequent Disciplines (Modules)
GC-4	Able to apply modern communication technologies, including in a foreign language(s) for academic and professional interaction	Foreign (Russian) language/ Иностраный (русский) язык	Environmental accounting and reporting / Экологический учет и отчетность Базовая компонента Учебная практика / Educational practice Вариативная компонента Производственная практика / Production practice Научно-исследовательская работа / Research work НИР / Research work Преддипломная практика / Pre-graduate practice
GC-5	Able to solve the problems of professional activity in the field of ecology, nature management and nature protection using information and communication, including geoinformation technologies		Philosophical problems of natural sciences / Философские проблемы естествознания Базовая компонента Учебная практика / Educational practice Вариативная компонента Производственная практика / Production practice Научно-исследовательская работа / Research work НИР / Research work Преддипломная практика / Pre-graduate practice

#### 4. COURSE WORKLOAD AND ACADEMIC ACTIVITIES

Workload of the course «Modern problems of Ecology» is 3 ECTS.

Table 4.1. Types of academic activities during the period of the HE program mastering

Вид учебной работы	TOTAL	Semesters			
		1	2	3	4
<i>Contact academic hours</i>	34			34	
Incl.:					
Lectures	17			17	
Lab work					
Seminars	17			17	
<i>Self-study</i>	22			22	
<i>Evaluation and assessment</i>	16			16	
<b>Total workload</b>	Ac.hours	<b>72</b>		<b>72</b>	
	ECTS	<b>2</b>		<b>2</b>	

## 5. COURSE CONTENTS

Table 5.1. The content of the discipline (module) by type of academic work

Name of the discipline section	Content of the section (topics)	Type of academic activity*
Introduction	Ecology as a complex science direction. Stages of the development of the ecological knowledge and science. System of the ecological disciplines. Ecology and nature management. Ecology and sustainability	Lectures, Seminars
Concept of the nature (use) management	Main directions and types of nature management. Laws and rules in ecology. Modern ecological problems of nature management: environmental consequences of gaps in nature management.	Lectures, Seminars
Human ecology	Stages of human development as a biological species. Dependence on natural conditions and factors. Periods of the noosphere development	Lectures, Seminars
Crises in the history of mankind	Crises in the historical development: sources and consequences. Modern stage of the development: difficulties in the functioning of ecosystems. Demographic crisis. Social crisis. Energy crisis	Lectures, Seminars
Strategies for overcoming the environmental crisis	Sustainable development strategies and goals. Solving environmental and social problems. Solving the problems of resource availability. Modern ecological research.	Lectures, Seminars

## 6. CLASSROOM EQUIPMENT AND TECHNOLOGY SUPPORT REQUIREMENTS

Table 6.1. Classroom equipment and technology support requirements

Classroom for Academic Activity Type	CLASSROOM EQUIPMENT	Specialized learning, laboratory equipment, software and materials for the mastering the course
Lecture	An auditorium for conducting lecture-type classes, equipped with a set of specialized furniture; a board (screen) and technical means of multimedia presentations.	-
Seminars	Classroom, equipped with a set of specialized furniture; whiteboard; a set of devices includes portable multimedia projector, laptop, projection screen, Stable wireless Internet connection. Software: Microsoft Windows, MS Office / Office 365, MS Teams, Chrome (latest stable release), Skype	-
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	-

Classroom for Academic Activity Type	CLASSROOM EQUIPMENT	Specialized learning, laboratory equipment, software and materials for the mastering the course
	access to an electronic information and educational environment.	

## 7. RECOMMENDED SOURCES FOR COURSE STUDIES

• *Main reading:*

1. Huang C. Y. et al. Introduction to ecology. – 2018.
2. Benjaminsen T. A., Svarstad H. Political ecology: A critical engagement with global environmental issues. – Springer Nature, 2021.

*Additional sources:*

1. Currie D. J. Where Newton might have taken ecology //Global Ecology and Biogeography. – 2019. – T. 28. – №. 1. – С. 18-27.
2. Riisgård H. U. General Ecology. – 2018..

*Internet-sources:*

1. Electronic library system of the RUDN and third-party electronic library systems, to which university students have access on the basis of concluded contracts:

- electronic library system of the RUDN University <http://lib.rudn.ru/MegaPro/Web>
- electronic library system «Университетская библиотека онлайн» <http://www.biblioclub.ru>
- electronic library system Юрайт <http://www.biblio-online.ru>
- electronic library system «Консультант студента» [www.studentlibrary.ru](http://www.studentlibrary.ru)
- electronic library system «Лань» <http://e.lanbook.com/>
- electronic library system «Троицкий мост»

2. Databases and search engines:

- electronic fund of legal and regulatory and technical documentation <http://docs.cntd.ru/>
- Yandex search engine <https://www.yandex.ru/>
- Google search engine <https://www.google.ru/>
- abstract database SCOPUS <http://www.elsevierscience.ru/products/scopus/>
- .....

*Educational and methodological materials for independent work of students during the development of the discipline/ module \*:*

1. A course of lectures on the discipline " Modern problems of Ecology".

\* - all educational and methodological materials for independent work of students are placed in accordance with the current procedure on the discipline page in the Telecommunication educational and Information System!

## 8. MID-TERM ASSESSMENT AND EVALUATION TOOLKIT

Evaluation materials and a point-rating system\* for assessing the level of competence formation (part of competencies) based on the results of mastering the discipline " Modern problems of Ecology" are presented in the Appendix to this Work Program of the discipline.

\* - evaluation toolkit and ranking system are formed on the basis of the requirements of the relevant local regulatory act of the RUDN (regulations / order).

### DEVELOPER:

Professor of the Department of  
Environmental Safety and  
Product Quality Management

Position, Department

**Redina M.M.**

Signature

Name

### HEAD OF THE DEPARTMENT:

Head of the Department of  
Environmental Safety and  
Product Quality Management

Department

**Savenkova E.V.**

Signature

Name

### HAED OF THE HIGHER EDUCATION PROGRAM:

Professor of the Department of  
Environmental Safety and  
Product Quality Management

Position, Department

**Redina M.M.**

Signature

Name