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**Federal State Autonomous Educational Institution of Higher Education "Peoples'
Friendship University of Russia named after Patrice Lumumba"**

Agrarian and Technological Institute

(name of the main educational unit (MEU) – developer of the program)

Department of Landscape Design and Sustainable Ecosystems

(name of the basic educational unit (BEU) – developer of the program)

WORKING PROGRAM OF THE DISCIPLINE

Sustainable development of urban areas

(name of discipline/module)

Scientific specialty:

1.5.15. Ecology

(code and name of scientific specialty)

The discipline is mastered within the framework of the postgraduate program:

Green infrastructure and sustainable development

(name of the program for training scientific and scientific-pedagogical personnel)

1. THE GOAL OF MASTERING THE DISCIPLINE

The objectives of mastering the discipline "Sustainable Development of Urban Areas" are to form a theoretical base necessary for carrying out research activities in the field of genetics, and to prepare for passing the candidate exam in specialty 1.5.15. Ecology.

2. REQUIREMENTS TO THE RESULTS OF MASTERING THE DISCIPLINE

As a result of mastering the discipline "Sustainable Development of Urban Areas", the postgraduate student must:

Know:

fundamental directions of general ecology, basic concepts and approaches to environmental research.

Be able to:

use scientific information retrieval resources and basic ecological approaches to solve simple research problems.

Own:

basic skills in environmental methods and information retrieval tools.

3. SCOPE OF THE DISCIPLINE AND TYPES OF STUDY WORK

The total workload of the discipline "Sustainable Development of Urban Areas" is 4 credit units (144 academic hours).

Type of academic work		Total, ac . h.	Semester 2
<i>Contact work</i>		60	60
including:			
Lectures (LC)		30	30
Laboratory work (LW)		-	-
Practical/seminar classes (SZ)		30	30
<i>Independent work of students</i>		48	48
<i>Control (exam)</i>		36	36
General complexity of the discipline	ak . h.	144	144
	. unit	4	4

4. CONTENT OF THE DISCIPLINE

Name of the discipline section	Section Contents (Topics)	Type of academic work
Section 1. Introduction to the history and problems of sustainable development and rational use of natural resources	Topic 1.1. Ecology in the system of scientific knowledge. Evolution of ecological views on the surrounding world. Basic laws and problems of ecology. Topic .1.2. Problems of environmental protection, biodiversity conservation and socio-ecological problems. Rational use of natural resources.	LK, SZ
Section 2. Scientific foundations of sustainable development	Topic 2.1. The concept of sustainable development. The system of basic concepts of sustainable development. Basic scientific principles of sustainable development. Topic 2.2. Scientific ideology of sustainable development. Instability as a function of many variables: natural changes; anthropogenic disturbance of natural systems; violent destruction of traditional way of life, disturbance of cultural traditions of ethnic groups.	LZ, SZ

Section 3. Strategy and main problems of sustainable development	<p>Topic 3.1. Interpretation of the concept and concept of sustainable development, its criticism. The economic capacity of the biosphere as an alternative to the concept of sustainable development. Concepts and strategies for the transition to sustainable development.</p> <p>Topic 3.2. Problems and consequences of rapid industrialization in a number of countries. Socio-economic aspect of sustainable development problems, smoothing out socio-economic contradictions.</p> <p>Topic 3.3. "Rationalization" of consumption. Energy and resource efficiency of the economy.</p>	LZ, SZ
Section 4. Environmental protection in Russia and in the world, the system of specially protected natural areas	<p>Topic 4.1. Problems of atmospheric protection. Methods of reducing and preventing emissions of pollutants into the atmosphere.</p> <p>Topic 4.2. The problem of hydrosphere protection. Water quality problems. Water-ecological disasters. Methods of preventing water pollution, processing of liquid-phase waste, use of valuable components.</p> <p>Topic 4.3. Problems of preserving biodiversity, preserving rare species and the gene pool of populations of living organisms.</p> <p>Topic 4.4. Human activity as the main cause of extinction of rare species in our time. Assessment of the causes of extinction of species. Conservation strategies ex situ . Species conservation categories. Legislative protection of species.</p> <p>Topic 4.5. Preservation of ecosystems and natural-territorial complexes. Protected natural areas. Formation of systems of specially protected natural areas is the most important condition for the implementation of the concept of sustainable development. Ecology of restoration.</p>	LZ, SZ
Section 5. Environmental issues and situations, implementation of environmental policy in the field of ensuring environmental security of the country and sustainable development at various hierarchical levels	<p>Topic 5.1. Classification of environmental problems and situations: classification methods, classification features, principles. Assessment of the severity of environmental situations, categories of environmental situations according to the degree of severity.</p> <p>Topic 5.2. Environmental pollution and human health. Condition and optimization of the living environment. Problems of quality of life and environmental safety.</p>	LZ, SZ

5. LOGISTIC AND TECHNICAL SUPPORT OF DISCIPLINE

Audience type	Equipping the auditorium	Specialized educational/laboratory equipment, software and materials
Seminar	An auditorium for conducting seminar-type classes, group and individual consultations, ongoing monitoring and midterm assessment,	No

Audience type	Equipping the auditorium	Specialized educational/laboratory equipment, software and materials
	equipped with a set of specialized furniture and technical means for multimedia presentations	
For independent work of students	A classroom for independent work of students (can be used for conducting seminars and consultations), equipped with a set of specialized furniture and computers with access to the EIS	No

6. EDUCATIONAL, METHODOLOGICAL AND INFORMATIONAL SUPPORT OF THE DISCIPLINE

Main literature:

Akimova T.V. Ecology. Man-Economy-Biota-Environment: Textbook for students of higher educational institutions / T.A.Akimova, V.V.Khasin; 2nd ed., revised. And supplemented. - M.: UNITY, 2006. - 556 p.

Berezina N. A. Plant ecology: a textbook for universities / N. A. Berezina, N. B. Afanasyeva. - M.: Academy, 2009. - 399 p.

Further reading:

Bigon M., Harper J., Townsend K. Ecology. Individuals, populations and communities. 2 vol. M. "Mir", 1989

Gilyarov A.M. Population ecology. Moscow State University Press. 1990.

Drozhdov N.N., Myalo E.G. Ecosystems of the world. Moscow: 1997, 340 p.

Lack D. Animal numbers and their regulation in nature. M. IL. 1957.

Nikolsky G.V. Ecology of fish, M., Higher School, 1974.

Odum Yu. Ecology. - M.: Nauka, 2006.

Protasov V.F. Ecology, health and environmental protection in Russia: Textbook and reference manual. - 2nd ed. - M.: Finance and statistics, 2000. - 666 p.

Revelle P., Revelle Ch. Our habitat. M.: Mir, 1994–1995. Book 1, 340 pp.; book 2, 296 pp.; book 3, 291 pp.; book 4, 320 s.

Khrystoforova N.K. Fundamentals of ecology. Vladivostok: Dalnauka, 1999, 515 p.

Chernova N.M. General ecology: Textbook / N.M. Chernova, A.M. Bylova. - M.: Bustard, 2008. - 416 p.

Shilov I.A. Ecology. Moscow: Higher School, 1997, 512 p.

Resources of the information and telecommunications network "Internet":

RUDN University Electronic Library System and third-party electronic library systems to which university students have access on the basis of concluded agreements:

- Electronic library system of RUDN: [site]. URL: <http://lib.rudn.ru/MegaPro/Web>
- Electronic library system "University Library Online": [website]. URL: <http://www.biblioclub.ru/>
- Educational platform "Urait": [website]. URL: <https://urait.ru/>
- Electronic Library System "Lan": [site]. URL: <https://e.lanbook.com/>
- Educational platform "Urait": [website]. URL: <https://urait.ru/>

Databases and search engines:

- Electronic fund of legal and normative-technical information: [site]. URL: <https://docs.cntd.ru/>
- Search engine "Yandex": [site]. URL: <https://yandex.ru/>
- Search engine «Google»: [site]. URL: <https://www.google.com/>

Educational and methodological materials for independent work of students in mastering a discipline/module:

A course of lectures on the subject "Sustainable development of urban areas".

7. EVALUATION MATERIALS AND SCORE-RATING SYSTEM FOR ASSESSING THE LEVEL OF DEVELOPMENT OF COMPETENCES IN THE DISCIPLINE

Assessment materials and the point -rating system for assessing the mastery of the discipline are presented in the appendix to this work program of the discipline.