

*Федеральное государственное автономное образовательное учреждение
высшего образования «Российский университет дружбы народов»*

Faculty of Ecology

Recommended by the Methodological council
on specialties and study directions

WORKING PROGRAM OF THE DISCIPLINE

Name of the discipline

ENVIRONMENTAL NORMS AND REGULATIONS

Recommended for the specialty/ direction

05.04.06 Ecology and nature management

Masters' program:

Economics of natural resources management

1. Goals and objectives of the discipline:

The objectives of the discipline are the formation of professional competencies (PC7-P9) in accordance with the state educational standard in the direction of 05.04.06, including:

- formation of students' systemic ideas about the theoretical and methodological foundations of environmental regulation;
- formation of ideas about the role of environmental regulation as the main instrument of environmental protection;
- informing students about current trends in the development of the environmental regulatory framework and its implementation, the role of environmental regulation as a basis for effective environmental management and the formation of a sustainable economy;
- informing students about approaches to the harmonization of standards and current trends in the development of domestic environmental standards;
- development of skills in the development of environmental standards and assessments of the sustainability of natural systems, skills in the application of environmental standards in organizational, management and design and production activities.

To achieve this goal in the course of teaching the course, the following tasks are solved:

- formation of ideas about the stability of natural systems;
- creation of a systematic understanding of the structure of environmental regulation in the Russian Federation;
- informing about foreign experience in environmental regulation and harmonization of standards in the field of environmental management;
- analysis of the current system of environmental regulation for various areas of nature management;
- formation of ideas about environmental regulation as a basis for economic regulation of nature management.

2. Place of discipline in the structure of the educational program:

The discipline Environmental statistics refers to the disciplines of the choice of block 1 of the curriculum.

Discipline Environmental regulation refers to the basic part of block 1 of the curriculum.

Table No. 1 shows the previous and subsequent disciplines aimed at the formation of the discipline's competencies in accordance with the competence matrix of EP HE,

Table 1

Previous and subsequent disciplines aimed at building competencies

Nr.	Code and name of competence	Preceding disciplines	Subsequent disciplines (groups of disciplines)
Universal competencies			
1	UK-1 Able to search, critically analyze problem situations based on a systematic approach, develop an action strategy	-	-
2	UK-2 Able to manage a project at all stages of its life cycle	-	-
General professional competencies			
3	OPK-2 Ability to use special and new sections of ecology, geoecology and nature management in solving scientific research and applied problems of professional activity		Industrial Safety
4	OPK-4 Ability to apply normative legal acts in the field of ecology and nature management, norms of professional ethics	-	Research work
Professional competencies (type of professional activity - research, control and expert, organizational and management)			
5	PC-8 the ability to monitor compliance with environmental protection requirements, conduct environmental expertise of	-	Research work

various types of design assignments, carry out environmental audits of any facility and develop recommendations for preserving the natural environment; organize and carry out work with statistical and reporting data		
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3. Requirements for the results of mastering the discipline:

The process of studying the discipline is aimed at the formation of the following competencies (in accordance with research, control and expert, organizational and management areas of activity):

PK8 - the ability to monitor compliance with environmental protection requirements, conduct environmental expertise of various types of design assignments, carry out an environmental audit of any facility and develop recommendations for preserving the natural environment; organize and carry out work with statistical and reporting data.

As a result of studying the discipline, the student must:

Know: theoretical foundations of environmental regulation; international practice of development and harmonization, as well as application of environmental standards; domestic practice of development and application of environmental standards in the field of protection of the atmosphere, surface and underground hydrosphere, soils and lands, biological resources, industrial and municipal waste management, implementation of the best available technologies, environmental and economic feasibility of projects based on existing and developed environmental standards.

To be able to: conduct a critical analysis of practical developments and research results on the listed issues; apply the obtained theoretical knowledge for planning, design, control and examination of projects of environmental protection works; to modernize the existing system of environmental regulation.

Possess: the skills of analyzing the need for environmental protection measures based on the application of environmental standards, the skills of selecting and applying indicators for environmental assessment and forms of environmental control based on environmental standards.

4. The scope of the discipline and types of educational work

The total labor intensity of the discipline	2 credits								
Type of educational work	Total hours	Semesters							
		1	2	3	4	5	6	7	8
Classroom Lessons (total)									
Including:									
<i>Lectures</i>	9	9							
<i>Practical lessons</i>	9	9							
<i>Seminars</i>	-								
<i>Laboratory work</i>	-								
<i>Independent work</i>	52								
Control	2								
The total labor intensity, hours.	72								
The total labor intensity, credits	2								

5. Discipline content

5.1 Contents of discipline sections

Discipline section name	Section content (topics)
1. Introduction	The environment as an object of statistical observation. Sources of statistical data in the field of environmental protection, ecological safety and environmental management
2. State statistical observation	State statistical observation. Accounting and reporting systems. Theoretical foundations of environmental statistics. Characterization of natural resources as part of the national wealth. System of indicators for statistics of natural resources. Environment and natural resources statistics

3. Environmental statistics of enterprises and companies	Statistical observation in the field of environmental management and sustainable development at the level of enterprises and companies. Reporting formats. Using observation results
4. Methods of statistical processing and data analysis	Methods of statistical processing and data analysis. Correlation and regression analysis. Basic concepts of correlation and regression analysis. The main tasks and prerequisites for the application of the correlation-regression method. Correlation-regression analysis of natural resources of the Russian Federation
5. Applied data analysis	Statistical methods and data analysis for processing the results of environmental monitoring. Classifications in environmental geochemistry. Data analysis in environmental economics.

5.2* Sections of disciplines and types of classes

№ п/п	Discipline section name	Lectures	Practical lessons	Independent work	Total hours
1.	Environmental regulation in the environmental management system. Theoretical foundations of environmental regulation	1	1	10	12
2.	International cooperation in the field of environmental regulation. Harmonization of environmental standards in the field of impacts on the atmosphere	2	2	10	14
3.	Harmonization of environmental standards in the field of impacts on surface waters. Harmonization of environmental standards in the field of impacts on groundwater	2	2	10	14
4.	Harmonization of environmental standards in the field of waste management Understanding the best available technology. Standardization of specific pollutants	2	2	10	14
5.	Environmental regulation and economics. Environmental regulation and environmental design	1	1	12	14

6. Laboratory workshop (if available) - NO

7. Practical lessons; seminars

Nr	Discipline section	Subjects of practical classes (seminars)	Total hours
1.	Environmental regulation in the environmental management system. Theoretical foundations of environmental regulation	Theoretical foundations of environmental regulation. Critical loads	1
2.	International cooperation in the field of environmental regulation. Harmonization of environmental standards in the field of impacts on the atmosphere	Methods of atmospheric pollution modelling and regulation	2
3	Harmonization of environmental standards in the field of impacts on surface waters. Harmonization of environmental standards in the field of impacts on groundwater	Methods of hydrosphere pollution modelling and regulation	2
4	Harmonization of environmental standards in the field of waste management Understanding the best available technology. Standardization of specific pollutants	Environmental regulation in the field of waste management	2
5	Environmental regulation and economics. Environmental regulation and environmental design	Environmental regulation and environmental projects	1

8. Material and technical base of the discipline:

An auditorium equipped with multimedia equipment and a personal computer with a standard package of office programs.

9. Information support of the discipline

When studying the discipline, traditional information technologies are used to present the theoretical part of the material by the teacher (PowerPoint presentation).

a) Software

MSWindows; MSOffice

b) databases, reference and search systems

www.mnr.gov.ru - site of the Ministry of Natural Resources of the Russian Federation;

http://rpn.gov.ru/ - Federal Service for Supervision in the Sphere of Natural Resources (Rosprirodnadzor);

www.ecoindustry.ru - site of the journal "Production Ecology";

www.unep.org - site of the United Nations Environment Program;

www.wwf.ru - site of the World Wildlife Fund.

http://burondt.ru/ - website of the BAT Bureau - information on the introduction of standardization based on the best available technologies

http://www.mnr.gov.ru/activity/directions/zelenye_standarty/zelenye_standarty/?sphere_id=124597 - information on the development, application and implementation of "green standards"

http://www.mnr.gov.ru/activity/directions/natsionalnyy_proekt_ekologiya/ - information on the progress of the National Project "Ecology"

10. Literature

Basic list

1. Khaustov A.P., Redina M.M. Rationing and reduction of environmental pollution. M.: Yurayt, 2017. -- 364 p. - Presented at the RUDN UNIBC and available on the website of the Yurayt publishing house at: https://biblionline.ru/viewer/normirovanie-i-snizhenie-zagryazneniya-okruzhayushey-sredy-432790?share_image_id=#page/1

2. Leikin Yu.A. "Fundamentals of environmental regulation: Textbook. M.: Publishing house "Forum", 2018

Additional list

1. DEVELOPMENT AND INTERNATIONAL ECONOMIC CO-OPERATION: ENVIRONMENT. Report of the World Commission on Environment and Development. URL: <http://upload.wikimedia.org/wikisource/en/d/d7/Our-common-future.pdf>

2. REPORT OF THE UNITED NATIONS CONFERENCE ON ENVIRONMENT AND DEVELOPMENT (Rio de Janeiro, 3-14 June 1992). URL: <https://www.un.org/documents/ga/conf151/aconf15126-3annex3.htm>

3. Shaker, R.R. (2015). The spatial distribution of development in Europe and its underlying sustainability correlations. Applied Geography, 63, 304-314.

4. SUSTAINABLE DEVELOPMENT KNOWLEDGE PLATFORM. URL: <https://sustainabledevelopment.un.org>

11. Methodical instructions for students on mastering the discipline (module)

Independent work of students includes:

- individual study of theoretical material on the subject of the course (links to information sources are presented in the previous sections);

- study of additional material;
- preparation of abstracts on the topics specified in the program.

11.1. Independent study of additional theoretical material is carried out by students on an individual basis; the list of recommended information sources is given above.

11.2. Requirements for writing abstracts

Academic ethics, respect for copyright. In the first lesson, students are informed about the need to comply with the norms of academic ethics and copyright during their studies. In particular, information is provided:

- general information about copyright;
- citation rules;
- link formatting rules

All footnotes in the text are carefully checked and provided with “addresses”. It is not permissible to include in your work excerpts from the works of other authors without indicating this, to retell someone else's work close to the text without referring to it, to use other people's ideas without indicating the primary sources. This also applies to sources found on the Internet. You must specify the full site address. All cases of plagiarism must be excluded. If unjustified and incorrect borrowings are identified, the abstract is not accepted.

When preparing written works, the following must be submitted without fail: work plan; a list of used literature, drawn up in accordance with the current rules for the bibliographic description of used sources.

For the preparation of the abstract, only special relevant sources should be used. In addition to abstracts, the subject of which is related to the dynamics of any phenomena over many years, or the historical development of scientific views on any problem, sources should be used for a period of no more than 10 years.

The prepared essay should be presented at one of the classes in agreement with the teacher. Use of PowerPoint presentations (or those prepared using similar licensed or free software) is encouraged, but not required. The approximate time of the presentation is up to 15 minutes. The structure of the report and additional requirements for the quality of materials are determined by the chosen topic and are additionally discussed with the teacher.

12. Fund of appraisal funds for intermediate certification of students in the discipline (module) (developed in accordance with the requirements of the "Regulations for the formation of funds of appraisal funds", approved by order of the rector dated 05.05.2016 No. 420).

Department of Applied Ecology

APPROVED

at the meeting of the department

August 28, 2019, minutes No. 1

Head of the Department

_____ M.M. Redina

(подпись)

VALUATION FUND

ON THE EDUCATIONAL DISCIPLINE

ENVIRONMENTAL NORMS AND REGULATIONS

direction 05.04.05 "Ecology and nature management"

Program:

Economics of natural resources management

Qualification (degree) of the graduate –

Master of Ecology and Nature Management

Passport of the fund of assessment tools by discipline

Direction 05.04.6 «Экология и природопользование»:

Discipline: Environmental statistics

Шифр Б1.В.05

12.1. Балльно-рейтинговая система оценки и характеристика шкалы оценивания *Rating assessment system and characteristics of the assessment scale*

Балльно-рейтинговая система оценки и характеристика шкалы оценивания

Controlled competence code or part thereof Код контролируемой компетенции или ее части	Controlled discipline topic Контролируемая тема дисциплины	Forms of control ФОСы (формы контроля уровня освоения ООП)				Topic points Баллы темы
		Classroom work Аудиторная работа		Самостоятельная работа	Экзамен	
		Test / Тест	Test work Контрольная работа	Class work Работа на занятии	Доклад seminar report	
UC-1,2 GC-2,4	Environmental regulation in the environmental management system. Theoretical foundations of environmental regulation	X		10		4
GK-2,4 PC-8	International cooperation in the field of environmental regulation. Harmonization of environmental standards in the field of impacts on the atmosphere	X		12		4
GK-2,4 PC-8	Harmonization of environmental standards in the field of impacts on surface waters. Harmonization of environmental standards in the field of impacts on groundwater	X		12		6
GK-2,4 PC-8	Harmonization of environmental standards in the field of waste management Understanding the best available technology. Standardization of specific pollutants	X		10		8
GK-2,4 PC-8	Environmental regulation and economics. Environmental regulation and environmental design	X		12		10
	Exam Экзамен		15	56	15	14

12.2 The maximum number of credits in the course is 3. At the same time, the following ratio is established between the number of points and the number of credits:

Points to credits ratio

Total points	Final assessment	Amount of credits

91	5	3
91-100	5	3
86 - 91	5 (B)	3
71-85	4 (C)	2
61-70	3+ (D)	1
51 - 60	3 (E)	1
21 - 51	2 (FX)	0
<21	2 (F)	0

6. Deciphering of grades is also accepted according to the specified document:

7. - A: "Excellent" - the theoretical content of the course has been fully mastered, without gaps, the necessary practical skills for working with the material learned have been formed, all the educational tasks provided for by the training program have been completed, the quality of their implementation was assessed by the number of points close to the maximum.

8. - B: "Very good" - the theoretical content of the course is mastered completely, without gaps, the necessary practical skills of working with the acquired material are basically formed, all the educational tasks provided for by the training program are completed, the quality of most of them is assessed by the number of points close to the maximum ...

9. - C: "Good" - the theoretical content of the course has been mastered completely, without gaps, some practical skills of working with the mastered material are not sufficiently formed, all the educational tasks provided for by the training program have been completed, the quality of performance of none of them has not been assessed with a minimum number of points, some types of tasks have been completed with mistakes.

10. - D: "Satisfactory" - the theoretical content of the course is partially mastered. but the gaps are not significant, the necessary practical skills to work with the acquired material are basically formed, most of the educational tasks provided for in the training program have been completed, some of the completed tasks may contain errors.

11. - E: "Mediocre" - the theoretical content of the course is partially mastered, some practical skills have not been formed, many of the educational tasks provided for by the training program have not been completed, or the quality of some of them is assessed by the number of points close to the minimum.

- FX: "Conditionally unsatisfactory" - the theoretical content of the course has been partially mastered, the necessary practical skills have not been formed, most of the educational tasks provided for by the training program have not been completed, or the quality of their implementation was assessed by the number of points close to the minimum; with additional independent work on the course material, it is possible to improve the quality of completing educational tasks.

- F: "Certainly unsatisfactory" - the theoretical content of the course has not been mastered, the necessary practical skills are not formed, all the completed study tasks contain gross errors, additional independent work on the course material will not lead to any significant improvement in the quality of the study tasks.

12.3 List of competencies and stages of their formation

Nr.	Code and name of competence
	Universal competencies
1	UK-1 Able to search, critically analyze problem situations based on a systematic approach, develop an action strategy
2	UK-2 Able to manage a project at all stages of its life cycle

	General professional competencies
3	OPK-2 Ability to use special and new sections of ecology, geoecology and nature management in solving scientific research and applied problems of professional activity
4	OPK-4 Ability to apply normative legal acts in the field of ecology and nature management, norms of professional ethics
	Professional competencies (type of professional activity - research, control and expert, organizational and management)
5	PC-8 the ability to monitor compliance with environmental protection requirements, conduct environmental expertise of various types of design assignments, carry out environmental audits of any facility and develop recommendations for preserving the natural environment; organize and carry out work with statistical and reporting data

12.4. Typical control tasks or other materials necessary to assess knowledge, skills, skills and (or) experience of activities, characterizing the stages of the formation of competencies in the process of mastering the educational program

Questions to prepare for certification

1. The role of the regulation of anthropogenic loads in the environmental management system. Environmental regulation as a basis for standardization in the field of environmental protection? The main stages in the development of environmental quality standards.

2. The main directions of environmental regulation. Examples of environmental regulations. Differences between ecosystem and hygienic directions of rationing.

3. The concept of "stability of natural systems". How is it used in environmental regulation? Give a brief description of the types of system stability.

4. Russian system of standards in the field of environmental protection and rational use of natural resources. Its main directions and development prospects.

5. The concept of the best available technologies and the prospects for this area of standardization. Green standards.

6. The main directions of environmental regulation of the quality of the atmosphere. Ambient air quality criteria. The role of environmental standards in carrying out activities for the protection of atmospheric air.

7. The main directions of environmental regulation in the field of water use. Criteria for assessing the state of water resources. Environmental standardization in the field of protection and use of surface and ground waters.

8. Assessment of the state of soil and land resources. Land use standards and theoretical foundations of their development. Determination of critical loads on soil and land resources.

9. Standards for the quality of soil and land resources: current state and main development prospects. Measures for the protection of soil and land resources: their development and implementation, taking into account environmental standards.

10. The main directions of environmental regulation in the field of production and consumption waste management. Peculiarities of the Russian system of regulation of waste generation and their danger to humans and the environment. The concept of secondary material resources.

11. Criteria for the state of biological resources and their justification. Examples of standards for the impact on biological resources.

12. Economic regulation of nature management and environmental regulation.

13. Production and resource regulation: development of environmental impact standards for enterprises. Stages of development of standards for maximum permissible emissions for enterprises.

14. International cooperation in the field of environmental regulation. Management standards in the field of environmental protection and use of natural resources.

15. Rationing of energy efficiency and international standards of energy use.

Sample topics of presentations

1. Environmental regulation in environmental projects
2. Systems of environmental regulation of foreign countries (on the example of a country)
3. Software and IT tools for environmental regulation
4. Approaches to the development of MPC standards
5. Features of ecosystem rationing
6. History of environmental regulation in Russia and abroad (on the example of one of the countries)
7. Environmental regulation as a basis for making management decisions in environmental management
8. Environmental regulation and reporting of enterprises
9. Environmental regulation and economic aspects of nature management
10. The system of environmental regulation in Russia: prospects for the harmonization of Russian and foreign standards (on the example of standardization in certain areas)
11. Features of environmental regulation of chemical pollution in the interaction of substances
12. Rationing of education and use of supertoxic substances
13. International cooperation in environmental regulation
14. Comparative characteristics of domestic and foreign environmental quality standards
15. Modeling the behavior of pollutants in the environment as an element of environmental regulation

12.4. Methodological materials defining the procedures for assessing knowledge, skills, and activity skills, characterizing the stages of the formation of competencies).

The assessment of knowledge, skills and abilities is carried out using the components of the WCF presented in paragraphs. 12.1-12.34, in accordance with the sequence of acquisition of competencies indicated in table. p. 12.2.

The program is compiled in accordance with the requirements of the ES HE RUDN / FGOS HE.

Developers:

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