

**Federal State Autonomous Educational Institution of Higher Education
"Peoples' Friendship University of Russia"**

Institute of Environmental Engineering

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

COURSE SYLLABUS

**Комплексная оценка природных и производственных потенциалов
территорий / Comprehensive assessment of natural and industrial potentials of
territories**

(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:**

УПРАВЛЕНИЕ ПРИРОДОПОЛЬЗОВАНИЕМ / NATURE MANAGEMENT

(наименование (профиль/специализация) ОП ВО)

1. COURSE GOALS

The purpose of the discipline is to get acquainted with modern theoretical basics and best international practice of a comprehensive assessment of natural and industrial potentials of territories.

2. LEARNING OUTCOMES

The mastering of the discipline "Комплексная оценка природных и производственных потенциалов территорий / Comprehensive assessment of natural and industrial potentials of territories" 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)
ПК-1 SPC-1	Способность формулировать проблемы, задачи и методы научного исследования, обобщать полученные результаты, формулировать выводы и практические рекомендации на основе результатов исследований The ability to formulate problems, tasks and methods of scientific research, summarize the results obtained, formulate conclusions and practical recommendations based on research results	ПК-1.1 Знает основы методологии планирования исследований SPC-1.1 Knows the basics of research planning methodology ПК-1.2 Умеет обобщать полученные результаты, формулировать выводы и практические рекомендации на основе результатов исследований SPC-1.2 He is able to summarize the results obtained, formulate conclusions and practical recommendations based on the results of research
ПК-2 SPC-2	Способность творчески использовать в производственно-технологической деятельности знания фундаментальных и прикладных разделов специальных дисциплин The ability to creatively use knowledge of fundamental and applied sections of special disciplines in production and technological activities	ПК-2.1 Владеет навыками применения передовых достижений науки для выбора и внедрения наилучших доступных технологий (НДТ) SPC-2.1 Has the skills of applying advanced scientific achievements to select and implement the best available technologies (BAT)
ПК-6 SPC-6	Способен диагностировать проблемы охраны природы, разрабатывать практические рекомендации по ее охране и обеспечению устойчивого развития to diagnose problems of nature protection, develop practical recommendations for its protection and sustainable development	ПК-6.1 Способен выявлять несоответствия состояния компонентов окружающей среды требованиям национальных и международных стандартов SPC-6.1 It is able to detect inconsistencies in the state of environmental components with the requirements of national and international standards

3. COURSE IN HIGHER EDUCATION PROGRAMME STRUCTURE

The discipline "Комплексная оценка природных и производственных потенциалов территорий / Comprehensive assessment of natural and industrial potentials of territories" 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 "Комплексная оценка природных и производственных потенциалов территорий / Comprehensive assessment of natural and industrial potentials of territories".

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

Code	Competence	Previous Disciplines (Modules)	Subsequent Disciplines (Modules)
ПК-1 SPC-1	Способность формулировать проблемы, задачи и методы научного исследования, обобщать полученные результаты, формулировать выводы и практические рекомендации на основе результатов исследований The ability to formulate problems, tasks and methods of scientific research, summarize the results obtained, formulate conclusions and practical recommendations based on research results	Методология научного творчества / Methodology of scientific creativity HSE менеджмент / HSE-management Экологическое проектирование промышленных объектов / Environmental design of industrial facilities Современные методы и технологии защиты окружающей среды / Modern methods and technologies of environmental protection	Информационные технологии в природопользовании / Information technologies in nature management Научно-исследовательская работа в семестре, включая курсовые работы / Research work in the semester, including term papers Производственная практика / Production practice
ПК-2 SPC-2	Способность творчески использовать в производственно-технологической деятельности знания фундаментальных и прикладных разделов специальных дисциплин The ability to creatively use knowledge of fundamental and	Сертификация сырья, производственных процессов и продукции по международным экологическим требованиям / Certification of raw materials, production processes and products in accordance with international environmental requirements Радиоэкологическая безопасность территорий /	Хранение, переработка и утилизация отходов / Storage, processing and disposal of waste Экология и здоровье населения / Ecology and public health Геохимические методы оценки окружающей среды / Geochemical methods of environmental assessment

Code	Competence	Previous Disciplines (Modules)	Subsequent Disciplines (Modules)
	applied sections of special disciplines in production and technological activities	Radioecological safety of territories Экологическое проектирование промышленных объектов / Environmental design of industrial facilities	Ландшафтное планирование / Landscape planning Управление минерально-сырьевым комплексом / Management of the mineral resource complex
ПК-6 SPC-6	Способен диагностировать проблемы охраны природы, разрабатывать практические рекомендации по ее охране и обеспечению устойчивого развития to diagnose problems of nature protection, develop practical recommendations for its protection and sustainable development	Management of natural resources / Менеджмент природных ресурсов Modern technologies for nature protection / Современные технологии защиты окружающей среды Industrial nature management and economics / Промышленное природопользование и экономика Economic aspects of natural resources management / Экономические аспекты природопользования Standards of environmental management and occupational safety / Стандарты экологического менеджмента и охраны труда Occupational safety and HSE-audit / Охрана труда и HSE-аудит	Management of energy resources / Менеджмент ресурсов энергетики Environmental norms for sustainability / Экологические нормы для устойчивого развития Environmental statistics / Экологическая статистика Environmental accounting and reporting / Экологический учет и отчетность Wastes: Landfills, Processing and Recycling / Отходы: хранение, захоронение, рециклинг Surface water quality: modeling and management / Качество поверхностных вод: моделирование и менеджмент Industrial safety / Промышленная безопасность Simulation and prevention of accidents / Моделирование и предупреждение аварий Учебная практика / Educational practice 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 «Комплексная оценка природных и производственных потенциалов территорий / Comprehensive assessment of natural and industrial potentials of territories» 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>	47			51	
<i>Evaluation and assessment</i>	27			23	
Total workload	Ac.hours	72		72	
	ECTS	2		2	

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*
General patterns of assessment of natural resource potential	Introduction to the discipline. The history of the development of the Earth's natural resources. The relationship between the level and type of economic development and the degree of development of the resource base. Regional patterns of allocation of energy resources are the basis for the development of the modern economy. Potential of alternative types of energy resources The mineral resource base of the modern economy. Problems of depletion of reserves and technologies of waste-free extraction of mineral resources Forest resources of the world. Ecological problems of forest use Climate resources and modern agriculture. Economic consequences of global warming. Land resources. Their depletion, problems of desertification and population increase. The consequences of urbanization. The world Ocean as a source of natural resources General issues of economic assessment of natural resource potential Accounting and evaluation systems for certain types of resources.	Lectures, Seminars
Regional features of natural resource potential assessment	Natural resource potential of European countries Natural resource potential of North American countries	Lectures, Seminars

	Natural resource potential of Latin American countries Natural resource potential of African countries Natural resource potential of Asian countries Natural resource potential of the countries of certain regions of Russia.	
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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 access to an electronic information and educational environment.	-

7. RECOMMENDED SOURCES FOR COURSE STUDIES

Main reading:

1. Tietenberg T., Lewis L. Environmental and natural resource economics. – Routledge, 2018. URL: https://fcom.stafpu.bu.edu.eg/Economy/3898/crs-15010/Files/environmental_and_natural_resource_economics_by_tom_tietenberg_9th_edition.pdf

Additional sources:

1. STATISTICS FOR ECONOMIES BASED ON NATURAL RESOURCE. URL: [https://unstats.un.org/unsd/statcom/47th-session/documents/BG-2016-30-Handbook-on-statistics-for-economies-based-on-natural-resources-\(Draft\)-E.pdf](https://unstats.un.org/unsd/statcom/47th-session/documents/BG-2016-30-Handbook-on-statistics-for-economies-based-on-natural-resources-(Draft)-E.pdf)
2. Usoltceva M. et al. Assessment of Natural Resource Potential of a Territory for Planning of Investment Development and Construction in Suburban Areas //MATEC Web of Conferences. – EDP Sciences, 2016. – T. 73. – C. 03004.
3. METHODS OF ECONOMIC ASSESSMENT OF NATURAL RESOURCES. URL: https://dukonference.lv/files/proceedings_of_conf/53konf/ekonomika/Vovere_Bugina.pdf

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

1. A course of lectures on the discipline "Комплексная оценка природных и производственных потенциалов территорий / Comprehensive assessment of natural and industrial potentials of territories".

* - 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 "Комплексная оценка природных и производственных потенциалов территорий / Comprehensive assessment of natural and industrial potentials of territories" 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 ERNM
Department



Stanis E.V.

Position, Department

Signature

Name

HEAD OF THE DEPARTMENT:

Head of the Department of
Environmental Safety and
Product Quality Management

Department



Signature

Savenkova E.V.

Name

**HAED OF THE HIGHER
EDUCATION PROGRAM:**

Professor of the Department of
Environmental Safety and
Product Quality Management

Position, Department



Signature

Redina M.M.

Name