PEOPLES' FRIENDSHIP UNIVERSITY OF RUSSIA NAMED AFTER PATRICE LUMUMBA

Institute of Environmental Engineering

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

COURSE SYLLABUS

HSE менеджмент / HSE-management

(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)

2026

1. COURSE GOALS

The purpose of the discipline is to get acquainted with modern international standards on environmental management, first of all the ISO 14000 group. In the course there will be considered stages of the development and implementation of standards, practical steps on the support of the regulatory system in the organization in order to achieve environmental improvements and regulate the environmental protection issues.

2. LEARNING OUTCOMES

The mastering of the discipline "HSE менеджмент / HSE-management" 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)
ОПК-2. GPC-2	Способен использовать специальные и новые разделы экологии, геоэкологии и природопользования при решении научно-исследовательских и прикладных задач профессиональной деятельности. Able to use special and new sections of ecology, geoecology and nature management in solving research and applied tasks of professional activity	**ОПК-2.1** Знает основы экологии, геоэкологии, экономики природопользования и экономики замкнутого цикла, а также экологического менеджмента **GPC-2.1** Knows the basics of ecology, geoecology, environmental economics and closed-loop economics, as well as environmental management
		ОПК-2.2 Умеет использовать экологические, экономические и другие специальные знания и алгоритмы для решения профессиональных задач **GPC-2.2** He is able to use environmental, economic and other special knowledge and algorithms to solve professional problems
ОПК-4. GPC-4	Способен применять нормативные правовые акты и нормы профессиональной этики в сфере экологии и природопользования. Able to apply regulatory legal acts and norms of professional ethics in the field of ecology and nature management	**ОПК-4.1** Знает основы экологического нормирования и основы законодательства в области природопользования **GPC-4.1** Knows the basics of environmental regulation and the basics of legislation in the field of environmental management
		ОПК-4.2 Умеет использовать и применять нормативные правовые акты в сфере экологии и природопользования **GPC-4.2** Knows how to use and apply regulatory legal acts in the field of ecology and nature management
		ОПК-4.3 Способен использовать нормы профессиональной этики в своей профессиональной деятельности **GPC-4.3** Is able to use the norms of professional ethics in his professional activity

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-5 SPC-5	Способен разрабатывать типовые природоохранные мероприятия и проводить оценку воздействия планируемых сооружений или иных форм хозяйственной деятельности на окружающую среду Is able to develop standard environmental protection measures and assess the impact of planned structures or other forms of economic activity on the environment	**ПК-5.1** Способен разрабатывать и планировать внедрение типовых природоохранных мероприятий с учетом международной практики и требований национального законодательства **SPC-5.1** Is able to develop and plan the implementation of standard environmental measures taking into account international practice and the requirements of national legislation

3. COURSE IN HIGHER EDUCATION PROGRAMME STRUCTURE

The discipline "HSE менеджмент / HSE-management" 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 "HSE менеджмент / HSE-management".

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

Code	Competence	Previous Disciplines (Modules)	Subsequent Disciplines (Modules)
ОПК-2. GPC-2	Способен использовать специальные и новые разделы экологии, геоэкологии и природопользования при решении научно-исследовательских и прикладных задач	Современные проблемы экологии и природопользования / Modern probems of ecology and nature manegement	Методы мониторинга экологической безопасности природопользования / Methods of monitoring environmental safety of nature management / Methods of monitoring environmental safety of nature management / Methods of

Code	Competence	Previous Disciplines (Modules)	Subsequent Disciplines (Modules)
	профессиональной деятельности. Able to use special and new sections of ecology, geoecology and nature management in solving research and applied tasks of professional activity		monitoring environmental safety of nature management Мониторинг природно-техногенных систем / Monitoring of natural and man-made systems Геохимические методы оценки окружающей среды / Geochemical methods of environmental assessment Ландшафтное планирование / Landscape planning Региональная геоэкологическая оценка территорий / Regional geoecological assessment of territories Производственная практика / Production practice
ОПК-4. GPC-4	Способен применять нормативные правовые акты и нормы профессиональной этики в сфере экологии и природопользования. Able to apply regulatory legal acts and norms of professional ethics in the field of ecology and nature management		Экологическое проектирование промышленных объектов / Environmental design of industrial facilities Международные стандарты управления качеством окружающей среды / International Environmental Quality Management Standards
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	Методология научного творчества / Methodology of scientific creativity	Экологическое проектирование промышленных объектов / Environmental design of industrial facilities Современные методы и технологии защиты окружающей среды / Modern methods and technologies of environmental protection Комплексная оценка природных и производственных потенциалов территорий / Comprehensive assessment of natural and industrial potentials of territories Информационные технологии в природопользовании / Information technologies in nature management

Code	Competence	Previous Disciplines (Modules)	Subsequent Disciplines (Modules)
	recommendations based on research results		Научно-исследовательская работа в семестре, включая курсовые работы / Research work in the semester, including term papers Производственная практика / Production practice
ПК-5 **SPC-5**	Способен разрабатывать типовые природоохранные мероприятия и проводить оценку воздействия планируемых сооружений или иных форм хозяйственной деятельности на окружающую среду Is able to develop standard environmental protection measures and assess the impact of planned structures or other forms of economic activity on the environment	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 / Radioecological safety of territories	Экологическое проектирование промышленных объектов / Environmental design of industrial facilities Современные методы и технологии защиты окружающей среды / Modern methods and technologies of environmental protection Хранение, переработка и утилизация отходов / Storage, processing and disposal of waste Международные стандарты управления качеством окружающей среды / International Environmental Quality Management Standards Управление минерально-сырьевым комплексом / Management of the mineral resource complex

4. COURSE WORKLOAD AND ACADEMIC ACTIVITIES

Workload of the course «HSE менеджмент / HSE-management» 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**
Contact academic hours		*34*	*34*	*34*		
Incl.:						
Lectures		17		17		
Lab work						
Seminars		17		17		
Self-study		*52*		*52*		
Evaluation and assessment		*22*		*22*		
Total workload	Ac.hours	**108**		**108**		
	ECTS	**3**		**3**		

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	Concept of integrated management system. Management in sphere of occupational, industrial, environmental safety and reduction of risk of enterprises in different branches.	Lectures, Seminars
Industrial safety risks	The concept of industrial safety. Sources of threats in the field of industrial safety. The history of industrial safety regulation in Russia and in the world. State regulation The concept of risk. Types of risks in the field of industrial safety. Risk identification: basic methods and practical examples. Risk Acceptability The concept of a "Hazardous industrial facility" (HIF). Criteria for inclusion in the HIF list. Declaration of HIF. HIFs and critically important objects of the economy	Lectures, Seminars
Industrial safety risk management	Risk management methods. Procedures, algorithms and management standards. Industrial safety insurance	Lectures, Seminars
Prevention and emergency response planning: chemical accidents. Disaster Prevention and Response Planning: Oil Spills	Sources of threats. The specifics of their identification. Planning algorithms. Composition of emergency response plans. Practical examples. Emergencies in the chemical complex. Sources of threats. The specifics of their identification. Oil and oil products as specific environmental pollutants. Planning algorithms. Composition of emergency response plans. Practical examples. Emergencies in the chemical complex	Lectures, Seminars
Safety requirements in industries.	Standardization in the field of industrial safety. Industry regulation. Practical examples. The concept of professional risks. The practice of assessing professional risks and managing them. Practical examples	Lectures, Seminars
Environmental risk and environmental management	Environmental management systems: international regulations and standards. Setting environmental aspects and environmental policy. Environmental performance. ISO 14000 in brief	Lectures, Seminars
Professional risks and occupational safety	Concept of occupational safety. Main state and international regulations. Occupational safety systems according OHSAS standards.	Lectures, Seminars
HSE-audit	Auditing procedures. Main requirements to the auditors. Standards of audit. HSE-audit procedures. Application of results	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 access to an electronic information and educational environment.	-

7. RECOMMENDED SOURCES FOR COURSE STUDIES

Main reading:

NEBOSH Support Materials. URL: https://www.nebosh.org.uk/course-materials/

Additional sources:

1. Ledashcheva T. N., Pinaev V. E. Environmental support of projects in Russia–modern practices. – 2019..
2. Ледащева Т. Н., Пинаев В. Е. Environmental impact fee calculation in Russia for EIA–modern practices. – 2019.
3. Carpi M., Bruschini M., Burla F. HSE Management Standards and burnout dimensions among rehabilitation professionals //Occupational Medicine. – 2021. – Т. 71. – №. 4-5. – С. 204-210.
4. Falahati M. et al. Model of the selection KPI for assessing the performance of the urban HSE management system //Iran Occupational Health. – 2019. – Т. 16. – №. 1. – С. 60-71.
5. Hooshmand H. A review of HSE management in construction industry & reduction of work-related accidents //Civil and Project Journal. – 2020. – Т. 2. – №. 6. – С. 11-28.

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/
- ……..

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

1. A course of lectures on the discipline "HSE менеджмент / HSE-management".

* - 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 "HSE менеджмент / HSE-management" 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).

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