**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

Philosophical problems of nature sciences

(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)

2022

1. COURSE GOALS

The course goal is to study natural science in the temporal development of actual philosophical problems, the foundations of modern science, which are of paramount importance for the formation of masters' ability to theoretical, methodological, abstract scientific thinking, as well as acquaintance with the philosophical aspects of natural sciences..

2. LEARNING OUTCOMES

The mastering of the discipline "Philosophical problems of nature sciences" 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)
УК-1. **GC-1**.	Способен осуществлять критический анализ проблемных ситуаций на основе системного подхода, вырабатывать стратегию действий/ Able to carry out a critical analysis of problem situations based on a systematic approach, develop an action strategy	**УК-1.2** владеет аргументацией и разрабатывает содержательно стратегию решения проблемной ситуации на основе системного и междисциплинарного подходов **GC-1.2** owns argumentation and develops a meaningful strategy for solving a problem situation based on a systematic and interdisciplinary approach
		УК-1.3 знает основы стратегии и определяет возможные риски, предлагая пути их устранения **GC-1.3** knows the basics of the strategy and identifies possible risks, suggesting ways to eliminate them
УК-2. **GC-2**	Способен управлять проектом на всех этапах его жизненного цикла. Able to manage a project at all stages of its life cycle.	**УК-2.2** способен разрабатывать концепцию проекта, формулирует цель, задачи, обосновывает актуальность, ожидаемые результаты и сферы их применения **GC-2.2** is able to develop the concept of the project, formulates the goal, objectives, justifies the relevance, expected results and scope of their application
УК-4. **GC-4**	Способен применять современные коммуникативные технологии, в том числе на иностранном(ых) языке(ах) для академического и профессионального взаимодействия Able to apply modern communication technologies, including in a foreign	**УК-4.4** Представляет результаты исследовательской и проектной деятельности на различных публичных мероприятиях, участвует в академических и профессиональных дискуссиях на русском (иностранном) языке **GK-4.4** Presents the results of research and project activities at various public events, participates in academic and professional discussions in Russian (foreign) language

Code	Competence	Indicators of competence achievement (within the framework of this discipline)
	language(s) for academic and professional interaction	
GC -5	Способен анализировать и учитывать разнообразие культур в процессе межкультурного взаимодействия. Able to analyze and take into account the diversity of cultures in the process of intercultural interaction	**УК-5.1.** знает основные категории философии, законы исторического развития, основы межкультурной коммуникации **GC-5.1** knows the main categories of philosophy, the laws of historical development, the basics of intercultural communication
		УК-5.2 умеет вести коммуникацию в мире культурного многообразия и демонстрировать взаимопонимание между обучающимися – представителями различных культур с соблюдением этических и межкультурных норм **GC-5.2** is able to communicate in a world of cultural diversity and demonstrate mutual understanding between students - representatives of different cultures in compliance with ethical and intercultural norms
УК-6 GC-6	Способен определить и реализовать приоритеты собственной деятельности и способы ее совершенствования на основе самооценки Able to identify and implement the priorities of their own activities and ways to improve it based on self-assessment	**УК-6.1** умеет оценивать свои ресурсы и их пределы (личностные, ситуативные, временные), целесообразно их использует **GC-6.1** knows how to evaluate his resources and their limits (personal, situational, temporary), uses them appropriately
		УК-6.2 способен определять образовательные потребности и способы совершенствования собственной (в том числе профессиональной) деятельности на основе самооценки **GC-6.2** is able to determine educational needs and ways to improve their own (including professional) activities based on self-assessment
		УК-6.3 владеет навыками выстраивания гибкой профессиональной траектории с учетом накопленного опыта профессиональной деятельности, динамично изменяющихся требований рынка труда и стратегии личного развития **GC-6.3** has the skills to build a flexible professional trajectory, taking into account the accumulated experience of professional activity, dynamically changing requirements of the labor market and personal development strategies
ОПК-1. GPC-1	Способен использовать философские концепции и методологию научного познания при изучении различных уровней	**ОПК-1.1** Знает философские концепции естествознания и методологию научного познания **GPC-1.1** Knows philosophical concepts of natural science and methodology of scientific cognition

Code	Competence	Indicators of competence achievement (within the framework of this discipline)
	организации материи, пространства и времени. Able to use philosophical concepts and methodology of scientific cognition in the study of various levels of organization of matter, space and time	**ОПК-1.2** Умеет использовать углубленные знания философских концепций естествознания при оценке последствий своей профессиональной деятельности **GPC-1.2** He is able to use in-depth knowledge of philosophical concepts of natural science in assessing the consequences of his professional activity

3. COURSE IN HIGHER EDUCATION PROGRAMME STRUCTURE

The discipline "***Philosophical problems of nature sciences***" 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 "Philosophical problems of nature sciences".

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

Code	Competence	Previous Disciplines (Modules)	Subsequent Disciplines (Modules)
УК-1. **GC-1**.	Способен осуществлять критический анализ проблемных ситуаций на основе системного подхода, вырабатывать стратегию действий/ Able to carry out a critical analysis of problem situations based on a systematic approach, develop an action strategy		Методология научного творчества / Methodology of scientific creativity Научно-исследовательская работа в семестре, включая курсовые работы / Research work in the semester, including term papers Производственная практика / Production practice
УК-2. **GC-2**	Способен управлять проектом на всех этапах его жизненного цикла. Able to manage a project at all stages of its life cycle.		Экологическое проектирование промышленных объектов / Environmental design of industrial facilities Научно-исследовательская работа в семестре, включая курсовые работы / Research work in the semester, including term papers Производственная практика / Production practice
УК-4. **GC-4**	Способен применять современные коммуникативные технологии, в том числе на		Иностранный язык / Foreign languige

Code	Competence	Previous Disciplines (Modules)	Subsequent Disciplines (Modules)
	иностранном(ых) языке(ах) для академического и профессионального взаимодействия Able to apply modern communication technologies, including in a foreign language(s) for academic and professional interaction		Методология научного творчества / Methodology of scientific creativity
GC -5	Способен анализировать и учитывать разнообразие культур в процессе межкультурного взаимодействия. Able to analyze and take into account the diversity of cultures in the process of intercultural interaction		Современные проблемы экологии и природопользования / Modern probems of ecology and nature manegement Международное сотрудничество в области охраны окружающей среды / International collaboration in invironmental protection Устойчивое развитие / Sustainable development Методология научного творчества / Methodology of scientific creativity
УК-6 GC-6	Способен определить и реализовать приоритеты собственной деятельности и способы ее совершенствования на основе самооценки Able to identify and implement the priorities of their own activities and ways to improve it based on self-assessment		Методология научного творчества / Methodology of scientific creativity Производственная практика / Production practice
ОПК-1. GPC-1	Способен использовать философские концепции и методологию научного познания при изучении различных уровней организации материи, пространства и времени. Able to use philosophical concepts and methodology of scientific cognition in the study of various levels of organization of matter, space and time		Методология научного творчества / Methodology of scientific creativity

4. COURSE WORKLOAD AND ACADEMIC ACTIVITIES

Workload of the course «Philosophical problems of nature sciences» is 3 ECTS.

Table 4.1. Types of academic activities during the period of the HE program mastering **ОЧНОЙ** *формы обучения*

Вид учебной работы		TOTAL	Semesters			
			1	2	3	4
Contact academic hours		*27*	*27*			
Incl.:						
Lectures		17	17			
Lab work						
Seminars		17	17			
Self-study		*47*	*47*			
Evaluation and assessment		*27*	*27*			
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*
Features of philosophical problems	The crisis of metaphysics. Philosophical problems of technology. Philosophical problems of modern science Philosophical problems of physics and cosmology	Lectures, Seminars
Skepticism in modern philosophy	The problem of rationality The induction problem	Lectures, Seminars
Linguistic turn in philosophy	The problem of truth. The problem of consciousness. Communicative program by J. Habermas	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	-

Classroom for Academic Activity Type	CLASSROOM EQUIPMENT	Specialized learning, laboratory equipment, software and materials for the mastering the course
	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:*

Van Cleave M.J., Jurczak P.M., Schneck C., Sjoquist D. Introduction to Philosophy. – URL: https://pressbooks.online.ucf.edu/app/uploads/sites/144/2020/01/Introduction-to-Philosophy.pdf

Additional sources:

Van Norden, Bryan W. "Taking back philosophy." Taking Back Philosophy. Columbia University Press, 2019.

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 "Philosophical problems of nature sciences".
* - 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 of mastering the discipline "Philosophical problems of nature sciences" 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		**Redina M.M.**
Position, Department	Signature	Name

HEAD of the DEPARTMENT:

Head of the Department of Environmental Safety and Product Quality Management		**Savenkova E.V.**
Department	Signature	Name

HAED od the HIGHER EDUCATION PROGRAM:

Professor of the Department of Environmental Safety and Product Quality Management		**Redina M.M.**
Position, Department	Signature	Name