

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

**Institute of Environmental Engineering**

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**WORKING PROGRAM OF THE DISCIPLINE**

**PROJECT MANAGEMENT**

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**Recommended by MSTs for the direction of training / specialty:**

08.04.01 Construction, 05.04.06. Ecology and environmental Management

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(код и наименование направления подготовки/специальности)

**The development of the discipline is carried out within the framework of the implementation of the main professional educational program of higher education (EP HE):**

**Environmental Engineering in Construction (Экологическая инженерия в строительстве)**

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(наименование (профиль/специализация) ОП ВО)

**2022 г.**

## 1. OBJECTIVE OF THE DISCIPLINE

The aim of the course "Project management" is to acquire knowledge in the field of project management, sufficient for further self-learning of this field in the process of practical activity..

## 2. REQUIREMENTS FOR THE RESULTS OF DISCIPLINE MASTERING

Mastering the discipline "Project management" is aimed at developing the following competencies (parts of competencies):

*Table 2.1. The list of competencies acquired by the students during the mastery of the discipline (the results of the mastery of the discipline)*

Code	Competencies	Competence achievement indicators (within this discipline)
ОПК-4-э	Able to apply regulatory legal acts and norms of professional ethics in the field of ecology and nature management..	ОПК-4.1-э Focuses on the modern system of regulatory and legal support for engineering and environmental surveys and environmental impact assessment of urban agglomerations.
		ОПК-4.2-э Knows the international practice of development and harmonization, as well as the application of environmental standards.
		ОПК-4.3-э Has the skills to analyze the need for environmental protection measures based on the application of environmental standards, the skills to select and apply indicators for environmental expertise and forms of environmental control based on environmental standards.
ПК-2	Able to diagnose environmental problems, develop standard environmental measures and practical recommendations for ensuring sustainable development, and assess the impact of planned structures or other forms of economic activity on the environment	ПК-2.1 Able to predict possible adverse changes in the natural and man-made environment, to conduct a preliminary analysis of the consequences of the information obtained during the study.
		ПК-2.2 Able to analyze environmental monitoring data, draw preliminary conclusions about the state of the subject and the environment.
		ПК-2.3 Able to assess the impact on the environment of the designed enterprise and structures, predict and evaluate the negative consequences.

### 3. THE PLACE OF DISCIPLINE IN THE STRUCTURE OF EP HE:

The course "Project management" refers to the part formed by the participants of the educational relations of the block B1/

As part of the EP HE , students also master other disciplines and / or practices that contribute to the achievement of the planned results of mastering the discipline "Project Management".

*Table 3.1. The list of the components of the educational program that contribute to the achievement of the planned results of mastering the discipline*

Code	Name of the competence	Previous disciplines/modules, practices*	Subsequent disciplines/modules, practices*
ОПК-4-э	Able to apply regulatory legal acts and norms of professional ethics in the field of ecology and nature management.	State regulation and technical regulation in construction	Environmental regulation, Sustainable development of urban areas
ПК-2	Able to apply environmental research methods to solve research and applied tasks of professional activity	State regulation and technical regulation in construction	Environmental regulation, Sustainable development of urban areas

\* - filled in in accordance with the matrix of competencies

### 4. SCOPE OF DISCIPLINE AND TYPES OF EDUCATIONAL WORK

The total labor intensity of the discipline "Project Management" is 3 credit.

Table 4.1. Types of educational work by periods of mastering the EP HE for FULL-time education

Type of educational work	TOTAL, ac.h.	Semester(s)			
		1	2	3	4
Contact work, ac.h.	108		108		
including:					
Lectures (L)	15		15		

Type of educational work		TOTAL, ac.h.	Semester(s)			
			1	2	3	4
Laboratory work (LW)						
Practical/seminar classes (SC)		30		30		
Independent work of students, ac.h.		49		49		
Control (exam / test with assessment), ac.h.		14		14		
<b>Total labor intensity of the discipline</b>	ac.h.	<b>108</b>		<b>108</b>		
	credit	<b>3</b>		<b>3</b>		

Таблица 4.2. Types of educational work by periods of mastering the OII BO for CORRESPONDENCE forms education\*

Type of educational work		TOTAL, ac.h.	Semester(s)			
			1	2	3	4
Contact work, ac.h.		108		108		
including:						
Lectures (L)		4		4		
Laboratory work (LW)						
Practical/seminar classes (SC)		6		6		
Independent work of students, ac.h.		94		94		
Control (exam / test with assessment), ac.h.		4		4		
<b>Total labor intensity of the discipline</b>	ac.h.	<b>108</b>		<b>108</b>		
	credit	<b>3</b>		<b>3</b>		

\* - filled in in case of implementation of the program in correspondence forms education

## 5. CONTENT OF THE DISCIPLINE

Table 5.1. Content of the discipline (module) by type of academic work

Name of the discipline section	Content of the section (topics)	Type of educational work*
<b>Topic 1. Fundamentals of the theory and practice of project management</b>	<p><i>Essence of project management. Tasks solved in the process of project management.</i></p> <p><i>The concept of the project cycle, the place of project management in the project cycle. Phases of the project management process: planning, monitoring, analysis.</i></p> <p><i>The conceptual apparatus of project management. Works and resources. Stored and non-stock resources. network plan. Financial plan.</i></p> <p><i>Historical experience in the development of project management methods.</i></p>	(L)
<b>Topic 2. Objectives and criteria for the quality of project management</b>	<p><i>Goals of project management. Minimizing the duration of the investment phase is the main goal of project management.</i></p> <p><i>Means to achieve the goals of project management: project information model, plan, warning system, monitoring and control. Factors taken into account in project management. Foresight and risk analysis.</i></p> <p><i>Criteria for the quality of project management: workload of resources, deviations from the plan, compliance with estimates, relationships in the workforce.</i></p>	(L)
<b>Topic 3. Risks of project activities and methods of control over them</b>	<p><i>Types of risks associated with the implementation of investment projects. Risks that can be managed during the project implementation phase. Technological, financial, and personnel risks. Methods of their minimization in the planning process and overcoming in the process of project implementation. The choice of risk management strategy depending on the circumstances associated with a particular project. Game-theoretic interpretation of risk management strategies.</i></p> <p><i>Risk management.</i></p>	(L)

<p><b>Topic 4. PERT technology</b></p>	<p><b>PERT</b> <i>Mathematical foundations of project management. Dynamic programming is the theoretical basis for the development of project information models. The critical path method (CPM) and its application to the problem of project management.</i></p> <p><i>PERT project management technology, its features in comparison with CPM. Types of projects that require the use of PERT technology to manage them.</i></p> <p><i>Prerequisites for the implementation of PERT technology. Organizational and technical conditions for the use of PERT technology.</i></p>	<p>(L)</p>
<p><b>Topic 5. Sources of information for making decisions on project management</b></p>	<p><i>Identification of works and resources. Justification of the duration of work and the need for resources.</i></p> <p><i>Links between jobs. Work and resource groups.</i></p> <p><i>Sources of data: experience in similar projects, experience of other organizations, technological maps, standardization of work, simulation of technological processes, expert assessment. Advantages and disadvantages of various sources, practical recommendations for their choice.</i></p>	<p>(L)</p>
<p><b>Topic 6. Information model of the project</b></p>	<p><i>The main data structures of the project information model: work table, resource table, distribution table, calendars, general information about the project. Methods of logical control of correctness of data entry. Presentation of the project information model in the form of a PERT diagram</i></p>	<p>(L)</p>
<p><b>Topic 7. Drawing up a project execution plan</b></p>	<p><i>Requirements for the project execution plan.</i></p> <p><i>The technological process of planning. A compromise between the duration of the investment phase and the need for resources. Methods of logical control of the correctness of the plan.</i></p> <p><i>Technological solutions to support the planning process.</i></p> <p><i>Documenting the network plan and displaying it in the form of a Gantt chart.</i></p> <p><i>Responsibility of the project manager. Interaction of the project manager with supervisors and specialists.</i></p>	<p>(L)</p>

<b>Topic 8. Implementation of the project execution plan</b>	<i>The content of the project manager's activities for the implementation of the network plan. Coordination and approval of the network plan. Bringing tasks to performers, control of execution, quality control of execution. Logistical, financial and personnel aspects of project management.</i>	(L)
<b>Topic9. Project execution monitoring</b>	<i>Objectives and content of the technological monitoring process. Revision of the plan taking into account the actual situation. Search for reserves. Operational resource management. Interface and technological solutions for monitoring support. Interaction of managers at various levels in the process of project monitoring and operational revision of the plan.</i>	(L)
<b>Topic10. Organizational aspects of the project management process and their technological support</b>	<i>Search for project improvement reserves using its information model. Technological support for meetings and consultations on resource allocation.  Technological and organizational support for collective project management and working groups of managers in a computer network. The system of individual responsibility in the working groups of managers. Analysis and evaluation of project management results</i>	(L)

\* - filled in only for full-time education: L - lectures; LW - laboratory work; S - seminars.

## 6. MATERIAL AND TECHNICAL SUPPORT OF THE DISCIPLINE

Table 6.1. Material and technical support of discipline

<b>Classroom type</b>	<b>Classroom equipment</b>	<b>Specialized educational/laboratory equipment and materials for the discipline/module realization</b>
Lecture hall	To organize the educational process, a classroom is used for conducting lecture-type classes, seminar-type classes, group and individual consultations, current control and intermediate certification, equipped with a set of specialized furniture; chalk board; technical means: HP PRO system unit, HP-V2072A monitor, LUMIEN retractable projection screen, with Internet access.	

	Software: Microsoft products (OS, office suite, including MS Office/Office 365, Teams, Skype)	
For independent work of students	<p>Computer class for conducting practical classes, course design, independent work.</p> <p>A set of specialized furniture; marker board; technical means: personal computers (18.), projection screen, multimedia projector, NEC NP-V302XG, Internet access.</p> <p>Software: Microsoft products (OS, office suite, including MS Office/Office 365, Teams, Skype)</p>	

\* - аудитория для самостоятельной работы обучающихся указывается **ОБЯЗАТЕЛЬНО!**

## 7. EDUCATIONAL, METHODOLOGICAL AND INFORMATIONAL SUPPORT OF THE DISCIPLINE

### *Mandatory literature:*

1. Проекты и управление проектами в землеустройстве и кадастрах в современной компании : Учебное пособие / Г. Л. Ципес, А. С. Товб. М.: Олимп-Бизнес, 2009. — 462 с.
2. Романова М.В. Управление проектами в землеустройстве и кадастрах: Учебное пособие по дисциплине специализации специальности «Менеджмент организации» М.: ФОРУМ: ИНФРА-М, 2009. — 253 с.
3. Светлов Н.М., Светлова Г.Н. Информационные технологии управления проектами. М.: ЦОП ФГОУ ВПО РГАУ-МСХА им. К.А. Тимирязева, 2006. — 148 с.

### *additional literature:*

1. Вентцель Е.С. Исследование операций: Задачи, принципы, методология. М.: Дрофа, 2006.
- Волков И.М, Грачёва М.В. Проектный анализ. М.: ЮНИТИ, 1998. — 423 с.
- Дитхелм, Г. Управление проектами в землеустройстве и кадастрах: [в 2 т.; пер. с нем.]. СПб.: Бизнес-пресса, 2003.
2. Клевцова Н.В. Эффективное управление экономическими проектами с использованием новых информационных технологий. М.: Изд-во МГЛУ, 2007. — 116 с.
3. Колпачев В.Н. Модели и методы в управлении проектами. Воронеж: Воронеж. гос. архитектурно-строит. ун-т, 2005. - 271 с.
4. Компьютерные технологии управления проектами. Программа TimeLine: Учеб. пособие / А.И. Демченко. Челябинск: Изд-во ЮУрГУ, 2001. - 49 с.
5. Локк Д. Основы управления проектами: [пер. с англ.]. - М. : НИРРО, 2004. - 239 с.



6. Мармел Э. Microsoft Office Project 2003: Библия пользователя / пер. с англ. и ред. И. Б. Тараброва. - М.: Диалектика, 2004. - 770 с.
7. Пинто Дж. Управление проектами в землеустройстве и кадастрах. СПб: Питер, 2004. — 464 с.
8. Риск-менеджмент инвестиционного проекта: Учебник для студентов вузов, обучающихся по экономическим специальностям / Под ред. М.В. Грачёвой, А.Б. Секерина. М.: ЮНИТИ-ДАНА, 2009. - 544 с.
9. Управление инновационными проектами: Учеб. пособие / Под ред. В.А. Елисеева. М.: НИИ РИНКЦЭ, 2005. - 310 с.
10. Управление проектами в землеустройстве и кадастрах: стандарты, методы, опыт / Товб А.С., Ципес Г.Л. М.: ЗАО Олимп-Бизнес, 2003. — 239 с.
11. Управление проектами в землеустройстве и кадастрах: Толковый англо-рус. слов.-справ. / Шапиро В.Д., Ольдерогге Н.Г., Юркевич А.А.; Под ред. В.Д.Шапиро. М.: Высш. шк., 2000. — 379 с.

*Resources of the information and telecommunications network "Internet":*

1. ЭБС РУДН и сторонние ЭБС, к которым студенты университета имеют доступ на основании заключенных договоров:

- Электронно-библиотечная система РУДН – ЭБС РУДН  
<http://lib.rudn.ru/MegaPro/Web>

- ЭБС «Университетская библиотека онлайн» <http://www.biblioclub.ru>

- ЭБС Юрайт <http://www.biblio-online.ru>

- ЭБС «Консультант студента» [www.studentlibrary.ru](http://www.studentlibrary.ru)

- ЭБС «Лань» <http://e.lanbook.com/>

- ЭБС «Троицкий мост»

- .....

2. Базы данных и поисковые системы:

- электронный фонд правовой и нормативно-технической документации  
<http://docs.cntd.ru/>

- поисковая система Яндекс <https://www.yandex.ru/>

- поисковая система Google <https://www.google.ru/>

- реферативная база данных SCOPUS  
<http://www.elsevierscience.ru/products/scopus/>

Общедоступные электронные библиотеки (Библиотека «Киберленинка», Библиотека МГУ <http://www.nbmggu.ru/>, Библиотека РУДН <http://lib.rudn.ru/> и др.)..

Полнотекстовые электронные версии журналов

Базы данных научной периодики и книг (Elibrary.ru, Национальный цифровой ресурс Руконт, Наука в Рунете и др.)

<https://www.un.org/sustainabledevelopment/ru/sustainable-development-goals/> - сайт ООН, Цели в области устойчивого развития

[www.mnr.gov.ru](http://www.mnr.gov.ru) – сайт Министерства природных ресурсов и экологии РФ;

<http://rpn.gov.ru/> – Федеральная служба по надзору в сфере природопользования (Росприроднадзор);

[www.ecoindustry.ru](http://www.ecoindustry.ru) – сайт журнала «Экология производства»;

[www.unep.org](http://www.unep.org) – сайт программы организации объединенных наций по окружающей среде;

[www.wwf.ru](http://www.wwf.ru) – сайт Всемирного фонда дикой природы.

<http://burondt.ru/> - сайт бюро НДТ – информация о внедрении нормирования на основе наилучших доступных технологий

[http://www.mnr.gov.ru/activity/directions/zelenye\\_standarty/zelenye\\_standarty/?sphrase\\_id=124597](http://www.mnr.gov.ru/activity/directions/zelenye_standarty/zelenye_standarty/?sphrase_id=124597) – информация о разработке, применении и внедрении «зеленых стандартов»

[http://www.mnr.gov.ru/activity/directions/natsionalnyy\\_proekt\\_ekologiya/](http://www.mnr.gov.ru/activity/directions/natsionalnyy_proekt_ekologiya/) - информация о ходе реализации Национального проекта «Экология»

Российская ассоциация управления проектами. М.: Совнет, 2002, 2009. <<http://www.sovnet.ru>>  
[Управление проектами в землеустройстве и кадастрах. М.: ГК ЛАНИТ, 1998, 2008. <http://www.projectmanagement.ru>](http://www.projectmanagement.ru)

Microsoft Office Project 2007: Программный продукт. Microsoft Corp., 2007.

\* - all teaching materials for independent work of students are placed in accordance with the current procedure on the discipline page in the TUIS!

## **8. EVALUATION MATERIALS AND SCORE-RATING SYSTEM FOR ASSESSING THE LEVEL OF FORMATION OF COMPETENCES IN THE DISCIPLINE**

Evaluation materials and a score-rating system\* for assessing the level of competence formation (part of competencies) based on the results of mastering the discipline "Project Management" are presented in the Appendix to this Work Program of the discipline.

\* - ОМ и БРС формируются на основании требований соответствующего локального нормативного акта РУДН.

**Developers:**

Associate Professor of the  
Department of  
environmental management

должность, название кафедры



подпись

D.E. Kucher

инициалы, фамилия

**Program Supervisor**

Director of the Department  
of Environmental Management

должность, название кафедры



подпись

D.E. Kucher

инициалы, фамилия

**Director of the Department  
of Environmental Management**

название кафедры



подпись

D.E. Kucher

инициалы, фамилия