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ФИО: Ястребов Олег Александрович  
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**Federal State Autonomous Educational Institution of Higher Education  
Peoples' Friendship University of Russia named after Patrice Lumumba  
RUDN University**

**Academy of Engineering**

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

**COURSE SYLLABUS**

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**PROJECT MANAGEMENT**

course title

**Recommended by the Didactic Council for the Education Field of:**

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**08.04.01 CONSTRUCTION**

field of studies / speciality code and title

**The course instruction is implemented within the professional education programme  
of higher education:**

**CIVIL ENGINEERING AND BUILT ENVIRONMENT**

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higher education programme profile/specialisation title

## 1. COURSE GOAL(S)

The goal of the course Project management is to provide students with the skills and knowledge needed to effectively use the principles of project management in construction.

Course objectives:

- 1) To establish an understanding of project life cycle and participants involved.
- 2) To provide the students with essentials of construction management including planning, scheduling, and estimating.
- 3) To familiarize students with measuring and managing performance in construction.
- 4) To present and discuss some tools to improve performance at project level.

## 2. REQUIREMENTS FOR LEARNING OUTCOMES

The course Project management implementation is aimed at the development of the following competences (competences in part):

*Table 2.1. List of competences that students acquire during the course «Project management»*

<b>Competence code</b>	<b>Competence descriptor</b>	<b>Competence formation indicators (within this course)</b>
GC-2	Able to manage the project at all stages of its life cycle	GC-2.1 Formulates the goals and objectives of the project, determines the expected results; GC-2.2 Within the scope of the tasks, identifies the available resources and limitations; GC-2.3 Develops a project implementation schedule; GC-2.4 Monitors the progress of the project, adjusts the schedule in accordance with the results of the control, evaluates the performance of the project
GC-3	Able to organize and lead a team, developing a team strategy to achieve the goal	GC-3.1 Knows how to organize teamwork, develop a strategy to achieve the goal; GC-3.2 Able to monitor the progress of teamwork and adjust its work for the effective achievement of goals
GC-6	Able to identify and implement the priorities of their own activities and ways to improve them on the basis of self-assessment	GC-6.1 Analyzes tasks, projects, and their goals. Defines its resources and their limits (personal, situational, temporary, etc.) for the successful completion of the task
GPC-3	Able to set and solve scientific and technical problems in the field of construction, construction industry and housing and communal services on the basis of knowledge of industry problems and experience in their solution	GPC-3.2 Able to set and solve scientific and technical tasks in the field of technology, organization, management of construction and operation of capital construction projects
GPC-4	Able to use and develop project and administrative documentation, as well as participate in the development of normative legal acts in the field of construction and housing and	GPC-4.2 Able to use and develop administrative documentation; GPC-4.3 Able to use normative legal acts in the field of construction industry and housing and communal services, as well as to participate in their development

	communal services	
GPC-5	Able to conduct and organize design and survey work in the field of construction, housing and communal services, carry out technical expertise of projects and designer's supervision of their compliance	GPC-5.1 Able to conduct and organize survey work in the field of construction and housing and communal services; GPC-5.2 Capable of conducting and organizing technical expertise of projects and author's supervision of their observance
GPC-7	Able to manage an organization operating in the construction industry and housing and communal services, to organize and optimize its production activities	GPC-7.1 Capable of planning and organizing work in the field of design, construction, operation of capital construction projects; GPC-7.2 Has knowledge in the field of operational management, management of works in the field of design, construction, operation of capital construction objects; GPC-7.3 Capable of controlling and accepting work in the design, construction and operation of capital construction projects; GPC-7.4 Knows the order of interaction with the customer, the delivery of completed work in the design, construction, operation of capital construction objects; GPC-7.5 Able to develop measures to improve the efficiency of work in the design, construction, operation of capital construction projects
PC-3	Organizational, technical and technological preparation of construction production	PC-3.1 Able to carry out scheduling of construction works; PC-3.2 Knows how to choose the required material, labor resources and construction equipment for the production of works; PC-3.3 Knows how to choose suitable techniques, methods of work; PC-3.4 Able to plan control over the production of construction works, including compliance with safety during the production of works
PC-5	Organization of construction works at the capital construction facility	PC-5.1 Knows how to determine the required resources to perform the work; PC-5.2 Able to carry out scheduling of works; PC-5.4 Capable of performing operational management, monitoring the progress of work

### 3.COURSE IN HIGHER EDUCATION PROGRAMME STRUCTURE

The course Project management refers to the *core component* of (B1) block of the higher educational programme curriculum.

Within the higher education programme students also master other disciplines (modules) and / or internships that contribute to the achievement of the expected learning outcomes as results of the course Project management.

*Table 3.1. The list of the higher education programme components that contribute to the achievement of the expected learning outcomes as the internship results.*

Comp ence code	Competence descriptor	Previous courses / modules, internships	Subsequent courses / modules, internships
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GC-2	Able to manage the project at all stages of its life cycle		Life Cycle Economics of Buildings; BIM-Technology in Construction Management; Independent Research Work (obtaining basic skills of research work); Independent Research Work
GC-3	Able to organize and lead a team, developing a team strategy to achieve the goal		Independent Research Work (obtaining basic skills of research work); Pedagogical Practice; Independent Research Work
GC-6	Able to identify and implement the priorities of their own activities and ways to improve them on the basis of self-assessment		Life Cycle Economics of Buildings; Independent Research Work (obtaining basic skills of research work); Introductory Practice; Independent Research Work
GPC-3	Able to set and solve scientific and technical problems in the field of construction, construction industry and housing and communal services on the basis of knowledge of industry problems and experience in their solution		BIM-Technology in Construction Management; Independent Research Work (obtaining basic skills of research work); Desin Practice; Technological Practice; Independent Research Work
GPC-4	Able to use and develop project and administrative documentation, as well as participate in the development of normative legal acts in the field of construction and housing and communal services		Life Cycle Economics of Buildings; BIM-Technology in Construction Management; Desin Practice; Technological Practice
GPC-5	Able to conduct and organize design and survey work in the field of construction, housing and communal services, carry out technical expertise of projects and designer's supervision of their compliance		Life Cycle Economics of Buildings; BIM-Technology in Construction Management; Desin Practice; Technological Practice
GPC-7	Able to manage an organization operating in		BIM-Technology in Construction Management;

	the construction industry and housing and communal services, to organize and optimize its production activities		Desin Practice; Technological Practice
PC-3	Organizational, technical and technological preparation of construction production		Life Cycle Economics of Buildings; BIM-Technology in Construction Management; Modelling of Construction Processes; Technological Practice; Pre-Graduation Practice
PC-5	Organization of construction works at the capital construction facility		Life Cycle Economics of Buildings; BIM-Technology in Construction Management; Modelling of Construction Processes; Technological Practice; Pre-Graduation Practice

#### 4. COURSE WORKLOAD AND ACADEMIC ACTIVITIES

The total workload of the course Project management is 2 credits.

Table 4.1. Academic activities types by periods of the higher education programme

Type of academic activities		Total academic hours	Semester(s)
			1
<i>Contact academic hours</i>		36	36
including:			
Lectures (LC)		18	18
Lab works (LW)		0	0
Seminars (workshops / tutorials) (S)		18	18
<i>Self-studies academic hours</i>		36	36
<i>Evaluation and assessment academic hours</i>		0	0
<i>Course work / project, credits</i>			
<b>Course workload</b>	academic hours	72	72
	credits	2	2

#### 5. COURSE CONTENTS

Table 5.1. Course contents and academic activities types

Modules	Contents (topics)	Academic activities types *
Section 1. Foundations of Project	Topic 1.1. Definition of a project. Nature of construction projects.	LC, S

<b>Modules</b>	<b>Contents (topics)</b>	<b>Academic activities types *</b>
Management	Topic 1.2. Project life cycle. Principles of project management. Project management functions.	
Section 2. Project planning and scheduling	Topic 2.1. Scheduling process. Work breakdown structures. Topic 2.2. Scheduling techniques. Critical path method. Topic 2.3. Resource management. Topic 2.4. Crashing.	LC, S
Section 3. Project cost estimating	Topic 3.1. Elements of cost estimation. Estimating methods. Topic 3.2. Project budgeting. Bidding.	LC, S
Section 4. Performance measurement	Topic 4.1. Definition of performance. Performance issues in construction. Factors affecting project success. Topic 4.2. Industry reports. Performance measurement tools. key performance indicators.	LC, S

\* - to be filled in only for **full**-time training: *LC* - lectures; *LW* - lab work; *S* - seminars.

## **6. CLASSROOM EQUIPMENT AND TECHNOLOGY SUPPORT REQUIREMENTS**

*Table 6.1. Classroom equipment and technology support requirements*

Type of academic activities	Classroom equipment	Specialized educational / laboratory equipment, software and materials for course study (if necessary)
Lectures	An auditorium for conducting lectures, equipped with a set of specialized furniture; a blackboard (screen) and technical means for multi-media presentations.	
Seminars	A classroom for conducting seminars, group and individual consultations, current and midterm assessment; equipped with a set of specialised furniture and technical means for multimedia presentations.	Computers, Multimedia projector, Screen for projector, Whiteboard, WiFi
Computer Labs	A classroom for conducting classes, group and individual consultations, current and mid-term assessment, equipped with personal computers (in the amount of 14 pcs), a board (screen) and technical means of multimedia presentations.	Software: Microsoft project, Primavera
Self-studies	A classroom for independent work of students (can be used for seminars and consultations), equipped with a set of specialised furniture and computers with access to the electronic information and educational environment	

\* The premises for students' self-studies are subject to **MANDATORY** mention

## **7. RESOURCES RECOMMENDED FOR COURSE STUDY**

*Main readings:*

1. Gontareva, I. V. Project management / I. V. Gontareva, R. M. Nizhegorodtsev, D. A. Novikov. - Moscow: KD Librokom, 2018. - 384 p.
2. Antonov, G. D. Project management of the organization: Uch. / G. D. Antonov, O. P. Ivanova, V. M. Tumin. - M.: Infra-M, 2018. - 64 p.

*Additional readings:*

1. Balashov, A. I. Project management: Textbook and practice for SPO / A. I. Balashov, E. M. Rogova, M. V. Tikhonova et al. - Lyubertsy: Yurayt, 2016. - 383 p.

*Internet sources:*

1. Electronic libraries (EL) of RUDN University and other institutions, to which university students have access on the basis of concluded agreements:

- RUDN Electronic Library System (RUDN ELS) <http://lib.rudn.ru/MegaPro/Web>
- EL "University Library Online" <http://www.biblioclub.ru>
- EL "Yurayt" <http://www.biblio-online.ru>
- EL "Student Consultant" [www.studentlibrary.ru](http://www.studentlibrary.ru)
- EL "Lan" <http://e.lanbook.com/>
- EL "Trinity Bridge"

2. Databases and search engines:

- electronic foundation of legal and normative-technical documentation <http://docs.cntd.ru/>
- Yandex search engine [https:// www .yandex.ru/](https://www.yandex.ru/)
- Google search engine <https://www.google.ru/>
- Scopus abstract database <http://www.elsevierscience.ru/products/scopus/>

*The training toolkit and guidelines for a student:*

1. Collection of lectures on the course Project management.

\* The training toolkit and guidelines for the course are placed on the internship page in the university telecommunication training and information system under the set procedure.

**DEVELOPERS:**

*Associate professor, Department of Construction  
Technology and Structural Materials*

*Elsheikh Asser Mohamed*

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position, department

name and surname

**HEAD OF EDUCATIONAL DEPARTMENT:**

*Department of Construction Technology and Structural  
Materials*

*Yazyev Serdar Batyrovich*

---

name of department

name and surname

**HEAD  
OF HIGHER EDUCATION PROGRAMME:**

*Associate professor, Department of Construction  
Technology and Structural Materials*

*Rynkovskaya Marina Igorevna*

---

position, department

name and surname