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MINISTRY OF SCIENCE AND HIGHER EDUCATION OF THE RUSSIAN FEDERATION

FEDERAL STATE AUTONOMOUS EDUCATIONAL INSTITUTION OF HIGHER EDUCATION

"MOSCOW POLYTECHNIC UNIVERSITY"
(MOSCOW POLYTECHNIC UNIVERSITY)

Faculty of Economics and Management

APPROVED BY
FEU Dean
_____ /A. V. Nazarenko/
«27» February 2025

WORKING PROGRAM OF THE DISCIPLINE

«Project Management»

Direction of training/specialty
38.03.01 Economy

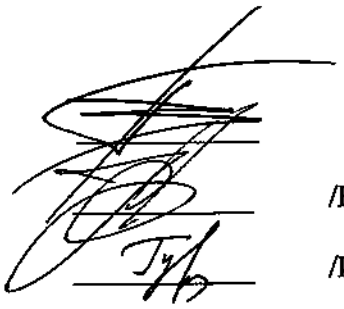
Profile/specialization
International business and foreign economic

Qualification
bachelor

Forms of study
full-time

Moscow, 2025

Программу составили:



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1 List of planned learning outcomes for the discipline, correlated with the planned learning outcomes for the educational program

This program of the academic discipline "Project Management" establishes the necessary requirements for the knowledge and skills of students in working in a team, including for effective integration into the project team, meeting project deadlines and obtaining the required results.

The program is designed for the training direction 38.03.01 "Economics", profile "Economics of enterprises and organizations" in accordance with:

- Federal state educational standards;
- Higher education programs;
- The working curricula for the start of training in 2023. **Objectives of the discipline**

The purpose of mastering the discipline "Project Management" is to study and master by students the theoretical foundations and practical skills in the field of project management to form ideas about project activities (from the inception of an idea to the implementation of a project) as an integral system, all elements of which are interdependent. Possession of theoretical foundations and practical skills in the field of project management are necessary for the successful mastering and implementation of innovative technologies that determine industrial development and management, the creation and implementation of innovative projects, professional personal growth and self-development, creative solutions to current and strategic management problems: from personnel management to the development of high-tech technologies.

Objectives of studying the discipline The main objectives of studying the discipline:

- study of the basic methods and technologies of project management: creation of a concept project, project team, project planning, implementation, etc.;

- study of the main technologies of project management: characteristics, methods applications, limitations, advantages, disadvantages, area of use (application), etc.;

- formation and development of theoretical knowledge and practical skills in the field technical and social design and project management.

Training in the discipline "Project Management" is aimed at developing the following competencies in students:

Code and name competencies	Indicators of Competence Achievement
PC-4. Capable of carrying out technical and economic justification of design solutions and technical development task radio engineering system from the point of view of technical-economic indicators.	IPC-4.1 Uses methodological techniques for technical and economic justification of design solutions; IPC-4.2 Carries out financial and economic planning of an engineering project; IPK-4.3. Develops technical specifications for the development of a radio engineering system from the point of view of technical and economic indicators.

2 The place of the discipline in the structure of the educational program

The discipline belongs to the part formed by the participants of educational relations of block B1 "Disciplines (modules)". The discipline belongs to the part formed by the participants of educational relations of block B1 "Disciplines (modules)" - B1.2 "Part formed by the participants of educational relations".

The discipline "Project Management" is studied in the 2nd semester of study in the field of training 38.03.01 "Economics", profile "Economics of enterprises and organizations".

The discipline is directly related to the following disciplines and practices OOP:

Introduction to project activities; Fundamentals of technological entrepreneurship; Project activities;

Psychology of business communication;

Educational practice (project);

3 Structure and content of the discipline

The total workload (volume) of the “Project Management” discipline is 2 credit units.

The volume of the discipline by types of classes (in hours) is 72 hours.

The discipline is taught in full-time and part-time forms of study.

Type of midterm assessment (form of control): credit.

3.1. Types of academic work and labor intensity

(by form of education)

Type of academic work	Total hours	Semester
		2
3.1.1 Full-time education		
Classroom lessons (total)	**36**	**36**
Including:	-	-
Lectures	-	-
Practical classes (PZ)	36	36
Seminars (C)	-	-
Laboratory work (LW)	-	-
Independent work (total)	**36**	**36**
Including:	-	-
Preparation for practical classes	36	36
Type of intermediate assessment – credit	-	-
Total labor intensity hours / credit unit	**72/2**	**72/2**
3.1.2 Part-time and part-time education		
Classroom lessons (total)	**18**	**18**
Including:	-	-
Lectures	-	-

Type of academic work	Total hours	Semester
		2
Practical classes (PZ)	18	18
Seminars (C)	-	-
Laboratory work (LW)	-	-
Independent work (total)	**54**	**54**
Including:	-	-
Preparation for practical classes	54	54
Type of intermediate assessment – credit	-	-
Total labor intensity hours / credit unit	**72/2**	**72/2**

3.2 Thematic plan for studying the discipline

(by form of education)

3.2.1 Full-time education

No. p/p	Sections/Topics disciplines	Labor intensity, hour					
		Total	Classroom work				Samostoyatelinya works A
			Lekts and	Seminarskie/ practical eskie classes	Laboratornye busytia	Practical itcheska I prepovka	
1	Introduction. Project management as a scientific discipline and practical field of activity	6	-	2	-	-	4
2	Topic 1. What what is a project? Main characteristics of the project.	6	-	2	-	-	4
3	Topic 2.Concept development project, basic requirements for the concept, creative thinking	6	-	4	-	-	2
4	Topic 3. Basic principles of project management and project activities	6	-	4	-	-	2

No. p/p	Sections/Topics disciplines	Labor intensity, hour					
		Total	Classroom work				Samostoyatelnaya work A
			Lekts and	Seminarskie/ practical eskie classes	Laborate rnye busy tia	Practical itcheska I prep ovka	
5	Topic 4. Project business plan	6	-	4	-	-	2
6	Topic 5. Project organization	6	-	2	-	-	4
7	Topic 6.Project Team	6	-	4	-	-	2
8	Topic 7. Project time management	6	-	2	-	-	4
9	Topic 8. Development and adoption of management decisions	4	-	2	-	-	2
10	Topic 9. Project risk management	4	-	2	-	-	2
11	Topic 10. Project life cycle	4	-	2	-	-	2
12	Topic 11. Completion of the project	4	-	2	-	-	2
13	Topic 12. Project Marketing	4	-	2	-	-	2
14	Overview practical lesson	4	-	2	-	-	2
	Credit						
	Total	**72**		**36**			**36**

3.2.2. Part-time and part-time education

No. p/p	Sections/Topics disciplines	Labor intensity, hour					
		Total	Classroom work				Itself standing tel naya work ta
			Lekts and	Semin Arskie/ practice cheskie busy I	Labo speaker nye busy and I	Practical tiches Kaya prep tovka	
1	Introduction. Project management as a scientific discipline and practical field of activity	6		1			4
2	Topic 1. What is a project? Main characteristics of a project	6	-	1	-	-	4
3	Topic 2.Concept development project, basic requirements for the concept, creative thinking	4	-	2	-	-	4
4	Topic 3. Basic principles of project management and project activities	4	-	2	-	-	4
5	Topic 4. Project business plan	4	-	2	-	-	4
6	Topic 5. Project organization	6	-	1	-	-	4
7	Topic 6.Project Team	6		2			4
8	Topic 7. Project time management	6	-	1	-	-	4
9	Topic 8. Development and adoption of management decisions	6	-	1	-	-	4

No. p/p	Sections/Topics disciplines	Labor intensity, hour					
		Total	Classroom work				Itself standing tel naya work ta
			Lekts and	Semin Arskie/ practice cheskie busy I	Labo speaker nye busy and I	Practical tiches Kaya prep tovka	
10	Topic 9. Project risk management	6	-	1	-	-	4
11	Topic 10. Project life cycle	4	-	1	-	-	4
12	Topic 11. Completion of the project	4		1			4
13	Topic 12. Project Marketing	4	-	1	-	-	4
14	Overview practical lesson	6	-	1	-	-	2
	Credit						
Total		**72**		**18**			**54**

3.3 Contents of the discipline

IntroductionProject management in materials science as a scientific discipline and practical field of activity.

Basic concepts of the project management discipline. Project management and project activities in the modern world: importance for the development of the scientific and technical process and society, features of the organization of project activities, world experience. Features of the application of project-based learning in the field of higher engineering education and the impact of project-based learning on professional competitiveness. What is a project? Basic characteristics of a project. A project as an object of management.

Topic 1. What is a project? Main characteristics of a project.

Classification of projects, project classification features. Objectives of project creation. History of Project Management development in radio engineering. Project as a management object. Project management methodology.

Topic 2. Development of the project concept, basic requirements for the concept, creative thinking.

Project as a way to satisfy the social needs of society. Project idea: formalization of ideas, alternatives, selection parameters. Key idea

Topic 3. The main patterns of organizing the project management process and project activities.

Project as a system (project map, project passport, project structure). Pilot project

Topic 4. Business plan of the project.

Requirements for the content of a business plan, types of business plans. Main sections and their characteristics. Evaluation of the attractiveness of a business plan for investors.

Topic 5. Organization of the project.

Organization of project activities. Evaluation of resources and resource provision of the project. External environment of the project. Stakeholders. Internal environment of the project, formation and management of the internal environment of the project.

Topic 6. Project team.

Main patterns of project team formation, social roles. Requirements for team members' competence. Project team life cycle. Organizational culture of the project.

Topic 7. Project time management.

Project time management is mtime management methods. For the student – self-organization and self-management techniques. Time management helps a person or a company plan time and save resources. The more we manage to do what we have planned and clearly planned, the higher the quality of our work and life.

Basic technologies of time planning and management. Time as one of the main project resources. Project time constraints, Gantt chart.

Topic 8. Development and adoption of management decisions.

A management decision involves a comparative assessment of a number of alternative options and the selection of the optimal one that best meets the interests of the project. Development and adoption of management decisions in the process of project development and implementation. Types (classification) of management decisions, basic technologies for making management decisions. Methods for assessing the effectiveness of management decisions.

Topic 9. Project risk management.

Project risk portfolio and its formation. Acceptable/unacceptable risk indicators. Project risk assessment and modern project risk management technologies. Impact of risks on the project implementation process (cost, resources, etc.) Classification of investment risks.Risk management in investing.

Topic 10. Project life cycle.

The project life cycle isa sequence of stages through which projects pass from initiation to completion, regardless of their specificityA clear understanding of these phases allows managers and executives to control projects as effectively as possible.Main stages of the project life cycle, their characteristics and functions. Project life cycle management.

Topic 11. Completion of the project.

Completion of the project: main patterns and stages. Evaluation of the project effectiveness. Social and economic effect from the project implementation.

Topic 12. Project marketing.

Marketing support of the project and six components: marketing research; development of a marketing strategy; formation of a marketing concept; project marketing program; project marketing budget; implementation of project marketing activities.

3.4 Topics of seminars/practical and laboratory classes

3.4.1 Seminars/Practical Classes

3.4.1.1 Seminar/practical lesson 1 on the topic Introduction. Project management in materials science as a scientific discipline and practical field of activity.

Introduction of the teacher, checking the compliance of the study group and the number of students in it. Formation of final lists of students with e-mail addresses. Discussion:

- the format of individual and collective educational assignments;

- topics for abstracts/essays on the subject of “Project Management”;

- organization and implementation of ongoing monitoring of students’ knowledge in the form of a survey. Selecting a topic for a paper/essay, which is a brief written presentation of the results of a theoretical analysis of a specific scientific (educational and research) topic, where the listener reveals the essence of the problem being studied, presents various points of view, as well as his own views on it.

Clarification of the topics of the papers and speakers for lesson 2.

3.4.1.2 Seminar/practical lesson 2 on topic 1. What is a project? Main characteristics of a project.

Discussion of the concept of a project, the goals and objectives of project management; project stages and their implementation. Study of existing international and Russian project management associations. International and national project management standards.

Organization and implementation of current monitoring of students' knowledge in the form of a survey. Listening to reports on the topic of the lesson. Clarification of the topics of reports and speakers for the lesson 3.

3.4.1.3 Seminar/practical lesson 3 on topic 2. Development of a project concept, basic requirements for a concept, creative thinking.

Discussion of the project concept. Study of the basic requirements for the concept. Requirements for its content. Development of the concept of a conditional project.

Organization and implementation of current monitoring of students' knowledge in the form of a survey. Listening to reports on the topic of the lesson. Clarification of the topics of reports and speakers for the lesson 4.

3.4.1.4 Seminar/practical lesson 4 on topic 3. Basic patterns of project management and project activities.

Discussion of the term "project activity", identification of patterns in project management. What is a project life cycle: its phases and stages. Features of project life cycle management. Parameters and characteristics of project work. Project management models and strategies.

Organizing and conducting current monitoring of students' knowledge in the form of a survey. Listening to reports on the topic of the lesson. Clarifying the topics of reports and speakers for the lesson 5.

3.4.1.5 Seminar/practical lesson 5 on topic 4. Project business plan.

Discussion of the concept of a project business plan. Project planning processes and levels. The relationship between project management functions and a business plan. A process-based approach to project management. Principles of effective project management. Business plan and the sequence of project management stages.

Organization and implementation of current monitoring of students' knowledge in the form of a survey. Listening to reports on the topic of the lesson. Clarification of the topics of reports and speakers for the lesson 6.

3.4.1.6 Seminar/practical lesson 6 on topic 5. Project organization.

Discussion of the concept of project organization. Project analysis: structure and composition. Project evaluation and selection criteria. Development of the project mission, goals and objectives. Rules for constructing a goal tree. Project resource provision: requirements for it.

Organization and implementation of current monitoring of students' knowledge in the form of a survey. Listening to reports on the topic of the lesson. Clarification of the topics of reports and speakers for the lesson 7.

3.4.1.7 Seminar/practical lesson 7 on topic 6. Project team.

Basic principles of forming a project team. Basic patterns of team development. Managing communications in a team.

Organization and implementation of current monitoring of students' knowledge in the form of a survey. Listening to reports on the topic of the lesson. Clarification of the topics of reports and speakers for the lesson 8.

3.4.1.8 Seminar/practical lesson 8 on topic 7. Project time management. Discussion of the concept

of project time management as a mtime management methods. For the student - as a technique of self-organization and self-management. Time planning and saving resources in project management.

Organization and implementation of current monitoring of students' knowledge in the form of a survey. Listening to reports on the topic of the lesson. Clarification of the topics of reports and speakers for the lesson 9.

3.4.1.9 Seminar/practical lesson 9 on topic 8. Development and adoption of management decisions.

Discussion of a management decision based on break-even analysis, the possibility of making it in project management. Break-even point. Discussion of product range planning and product range policy analysis. Making pricing decisions. Discussion of operational and long-term tasks in the project.

Organization and implementation of current monitoring of students' knowledge in the form of a survey. Listening to reports on the topic of the lesson. Clarification of the topics of reports and speakers for lesson 10.

3.4.1.10 Seminar/practical session 10 on topic 9. Project risk management. Discussion of

project risk management asan ongoing process aimed at identifying and preventing risks or minimizing their impact on a project.Discussion of investment risk as the possibility of partial or complete loss of the investor's own investments. Discussion n **non-diversifiable (systemic) risks: market, interest rate risk, currency, inflation, political. Discussion of diversifiable (non-systemic) risks: business, financial, operational. Discussion of investment risk assessment methods: expert method, analysis method, analogy method, quantitative assessment method.**

Organization and implementation of current monitoring of students' knowledge in the form of a survey. Listening to reports on the topic of the lesson. Clarification of the topics of reports and speakers for lesson 10.

3.4.1.11 Seminar/practical session 11 on topic 10. Project life cycle. Discussion of the

project life cycle. The project life cycle helps to: improve communication between the team and customers; be sure that the goal is achievable with the available resources; manage and minimize risks. Discussion of the project life cycle phases: initiation, planning, execution, control, completion.

Organization and implementation of current monitoring of students' knowledge in the form of a survey. Listening to reports on the topic of the lesson. Clarification of the topics of reports and speakers for the lesson 11.

3.4.1.12 Seminar/practical session 12 on topic 11. Completion of the project. Discussion of the completion of the project as the final stage of its life cycle, the result of which is confirmation and documentary registrationcompletionall worksprojectand the final resolution of all contentious issues between the interested partiesproject. Discussion of project closure scenarios:

- natural completion of the project (occurs when the project reaches its final goals and is closed naturally on time);

- unnaturalproject completion (occurs when the project reaches
premature completion for various reasons: financial; changes in the market situation; miscalculations during planning and implementation of the project; the emergence of conditions, which make the implementation of the project useless for the investor).

Discussion of the project completion algorithm. Discussion of measuring the assessment of the social significance of the project.

Listening to reports on the topic of the lesson. Clarification of the topics of reports and speakers for lesson 12.

3.4.1.13 Seminar/practical lesson 13 on topic 12. Project marketing. Discussion of external and internal project marketing. Let's consider marketing in two aspects: the content of project marketing and the implementation of marketing at various stages of its life cycle. Discussion of the six components of marketing: marketing research; development of a marketing strategy; formation of a marketing concept; project marketing program; project marketing budget; implementation of project marketing activities. The product life cycle model as one of the important elements of the project concept.

Listening to reports on the topic of the lesson.

3.4.1.14 Seminar/practical lesson 14. Overview practical lesson. Overview practical lesson: project as a management object. Organization and implementation of current monitoring of students' knowledge in the form of a survey.

3.4.2 Laboratory exercises

(The topics of the classes are indicated with a list of laboratory work) Laboratory classes are not planned.

3.5 Topics of course projects (course papers)

Course projects (coursework) are not planned.

4 Educational, methodological and information support 4.1 Regulatory documents and GOSTs

Regulatory documents and GOSTs are not used when studying the discipline. Students can use industry regulatory documents and GOSTs when studying the discipline, if necessary.

4.2 Main literature

1. Verzukh, E. Project Management: An Accelerated Course in the MBA Program / E. Verzukh. - M.: Dialectics, 2019. - 480 p.

2. Balashov, A.I. Project Management: Textbook and Workshop for Academic bachelor's degree/A.I. Balashov, E.M. Rogova, M.V. Tikhonova and others. - Lyubertsy: Yurait, 2016.- 383c.

3. Zub, A.T. Project Management: Textbook and Workshop for Academic bachelor's degree / A.T. Zub. - Lyubertsy: Yurait, 2016. - 422 p.

4.3 Further reading

1. Business. Complete Encyclopedia. – M.: Eksmo, 2012.
2. Business Encyclopedia / Edited by R. Golov. – M.: Dashkov i Ko, 2012.
3. Small business: a textbook / edited by V.Ya. Gorfinkel. – M.: KNORUS, 2009.
4. Entrepreneurship: textbook / edited by V.Ya. Gorfinkel, G.B. Polyak, V.A. Shvandar. - 4th ed.; revised and enlarged. - M.: UNITY-DANA, 2007.
5. Entrepreneurship: textbook / edited by V.Ya.Gorfinkel, G.B.Polyak. – 5th ed.; revised and enlarged – M.: UNITY-DANA, 2009.
6. Newton, R. Project management from A to Z / R. Newton. - M.: Alpina Publisher, 2018. - 180 p.
7. Official website of the Federal State Statistics Service (Rosstat) http://www.gks.ru
8. Rosbusinessconsultinghttp://www.rbk.ru
9. Ministry of Natural Resources and Environment of the Russian Federation.http://www.mnr.gov.ru
10. Institute for Demographic Researchhttp://www.demographia.ru
11. Public administration. Electronic bulletin. URL: http://ejournal.spa.msu.ru
12. Forecasts and forecasting www.prognoz.orgwww.ecfor.ru
13.www.aup.ru/books/i002.htm – administrative and management portal.
14.www.akeu.ru – association of consultants in economics and management.

4.4 Electronic educational resources

1. Mospolitekh digital education platform -https://lms.mospolytech.ru/
2. Personal account of the student (portfolio) (the entrance to the personal account is located on the official website of the University and includes a student portfolio, electronic statements, student ratings and provides:
- recording the progress of the educational process, the results of the midterm assessment and the results of mastering educational programs by students,
- formation of an electronic portfolio of the student, including the preservation of works student, reviews and assessments of these works;
3. Access to the information and telecommunications network "Internet"
4. Electronic libraries, including electronic catalogs, full-text documents and providing access to educational and methodological materials
5. Antiplagiat System - https://www.antiplagiat.ru/
6. The system "POLYTECH systems" provides information, documentation automated support of the educational process.

4.5 Licensed and freely distributed software security

1. Microsoft Office suite programs (Word, Excel, PowerPoint)

4.6 Modern professional databases and information reference systems

1. SPS "ConsultantPlus: Non-commercial Internet version". - URL: http://www.consultant.ru/online/ (date accessed: 16.02.2023). –Access mode: free.

5 Logistics

1. Auditorium for practical classes.
2. Interactive whiteboard.
3. Computer class with Internet access.
4. Audience for group and individual consultations, ongoing monitoring and midterm assessment.
5. Audience for independent work.
6. Library, reading room.

6 Methodological recommendations

6.1 Methodological recommendations for the teacher on the organization training

This section of this work program is intended for beginning teachers and practicing specialists who do not have teaching experience.

The discipline "Project Management" is a discipline of the part of the RUP formed by the participants of educational relations of the block B1 "Disciplines (modules)" - B1.2 "Part formed by the participants of educational relations" and provides the initial stage of formation of competence in the direction of training 38.03.01 "Economics" profile "Economics of enterprises and organizations".

In the process of mastering the course topics, the teacher should pay primary attention to issues of developing an understanding of the norms of project activities.

When studying the discipline, it is necessary to ensure that students understand the essence of project activities and practical mastery of the methodology for developing an innovative idea to the level of a scalable business.

The theoretical study of the main issues of the discipline sections should be reinforced by active practical work within the framework of the discipline “Project Management”.

To activate the educational process when studying a discipline, it is effective to use current monitoring of students' knowledge in the form of a survey, as well as listening to reports on the topic of the lesson.

In design conditions educational systems on principles the competence-based approach has resulted in a conceptual change in the role of the teacher, who, along with the traditional role of the knowledge carrier, performs the function of the organizer of the student's research work, a consultant in the procedures for selecting, processing and interpreting information necessary for practical action and further development, which must be taken into account when conducting practical classes in the discipline "Project Management".

The detailed content of individual sections of the discipline “Project Management” is considered in paragraph 3.3 of the work program.

The topics of practical classes in sections of the discipline and types of classes are reflected in paragraph 3.4 of the work program. Conducting practical classes is aimed at:

- study of specialized literature and popular periodicals;
- specialized information sites;
- formation of a scientifically based understanding of the specifics of project management modern students;
- setting goals, defining tasks, planning the expected result when completion of the project;
- project marketing.

Section 3.3 specifies the subject content of the discipline. Section 3.4 specifies the seminar/practical and laboratory classes. List of primary and secondary literature and news information sites required during teaching

discipline "Project Management" is given in paragraph 4 of this work program. The teacher should guide students to use modern scientific literature in preparation for seminars/practical classes in the discipline.

The assessment tools for current monitoring and midterm assessment of students are provided in paragraph 7 of the work program, taking into account the competency-based approach in the process of implementing the educational program.

The assessment of the forms of current control and interim certification includes preparation for the test on the questions proposed in paragraph 7.3.

6.2 Methodological instructions for students on mastering the discipline

Acquiring in-depth knowledge of the discipline is achieved through active independent work of students. It is advisable to use the allocated hours to get acquainted with educational and scientific literature on the problems of the discipline, and to analyze scientific concepts.

The discipline provides for various forms of monitoring the level of achievement by students of the stated indicators of mastery of competencies.

Forms of ongoing control – active work in practical classes, testing.

The form of intermediate control in the discipline is a test during which the level of achievement of the stated indicators of mastery of competencies by students is assessed.

6.2.1 Methodological guidelines for mastering the discipline.

Seminars/practical classes are conducted in accordance with the content of this work program in an offline format. Attendance at seminars/practical classes is mandatory.

Seminars/practical classes on the subject “Project Management” are conducted in the following forms:

- survey on materials discussed in lectures and studied independently recommended literature;
- analysis and discussion of issues related to the topic of the lesson;
- presentation of an abstract/essay;
- a short presentation on the topic of the paper/essay and answers to questions.

Active participation in seminars/practical classes is mandatory. Preparation for practical classes necessarily includes studying lecture notes and recommended literature for an adequate understanding of the conditions and method of completing the tasks planned by the teacher for a specific practical class.

6.2.2 Methodological guidelines for independent extracurricular work.

Independent work is the main type of work on mastering the theoretical materials of the course and acquiring work skills during time free from compulsory classes. theoretical material and acquiring the required skills within the framework of The goal of independent work is the practical acquisition of competencies by students.

Independent work of the student on mastering the educational material on the academic discipline can be performed in the University library, classrooms, computer labs, and also at home. The content and amount of independent work of the student is determined by the curriculum of the discipline, methodological materials, practical assignments and instructions of the teacher.

Study of primary and secondary literature in the discipline is conducted on a regular basis in the context of each topic in preparation for the midterm assessment

discipline "Project Management". The list of primary and secondary literature on the discipline is given in paragraph 4 of this work program.

Preparation for the practical lesson. Practical classes allow the student to develop creative theoretical thinking, the ability to independently study literature, analyze practice; they teach how to clearly formulate thoughts, conduct discussions, that is, they are of exceptional importance in the development of independent thinking.

Preparation for a practical lesson includes two stages. At the first stage, the student plans his/her independent work, which includes: understanding the task for independent work; selection of primary and additional literature; drawing up a work plan, which defines the main points of the upcoming preparation. Drawing up a plan disciplines and improves organization in work.

The second stage includes direct preparation for the lesson, which begins with studying the main and additional literature. Particular attention should be paid to the content of the main provisions and conclusions, explanation of phenomena and facts, clarification of the practical application of the theoretical issues under consideration. Next, you should prepare theses for presentations on all educational issues brought up in the practical lesson or on the topic of the paper brought up in the lesson, think through examples in order to ensure a close connection between the topic being studied and real life.

When preparing for a presentation during a practical lesson, you should seek help from your teacher if necessary.

Guidelines for preparation for midterm assessment The midterm assessment in the discipline "Project Management" is held in the form of a test. An approximate list of questions for the test in the discipline "Project Management" and the criteria for assessing the student's answer for the purpose of assessing the achievement of the declared indicators of competence formation are provided in the composition of the FOS for the discipline in paragraph 7 of this work program.

The student is admitted to the midterm assessment in the discipline regardless of the results of the current academic performance monitoring.

6.2.3 Features of the implementation of the discipline for disabled people and persons with with disabilities

Teaching in the discipline “Project Management” to disabled people and people with limited health capabilities (hereinafter referred to as PHC) is carried out by the teacher, taking into account the characteristics of psychophysical development, individual capabilities and health status of such students.

For students with musculoskeletal disorders and hearing disabilities, lectures and practical classes are supported by multimedia tools and handouts.

For students with visual disabilities, the use of technical means to enhance residual vision is envisaged, and the possibility of developing audio materials is also provided.

In the discipline "Project Management", training of disabled people and people with disabilities can be carried out both in the classroom and using an electronic information and educational environment, an educational portal and e-mail.

7 Evaluation Fund

7.1 Methods of monitoring and assessing learning outcomes

Code and name competencies	Achievement indicators competencies	Control methods and assessments
PC-4. Capable realize technical-economic justification design solutions and technical task for development radio engineering systems from the point technical point of view economic indicators.	IPC-4.1 Uses methodological techniques for technical and economic justification of design solutions; IPC-4.2 Implements financial and economic planning of an engineering project; IPC-4.3. Develops technical specifications for development of a radio engineering system from the point of view of technical and economic indicators.	Midterm assessment: credit Current control: - survey at seminars/ practical classes; - abstract/essay.

7.2 Scale and criteria for assessing learning outcomes

7.2.1 Criteria for assessing the answer during the test

(development of competence PC-4, indicators IPC-4.1, IPC-4.2, IPC-4.3) Intermediate assessment of students in the form of a test is carried out based on the results of completing all types of academic work provided for by the curricula for the discipline "Project Management", taking into account the results of current monitoring of academic performance during the semester. The assessment of the degree of achievement by students of the planned learning outcomes for the discipline is carried out by the teacher conducting classes on the discipline.

Based on the results of the midterm assessment for a discipline, a grade of “pass” or “fail” is given.

Rating scale	Description
Passed	All types of educational work provided for by the curriculum have been completed. The student is able to use methodological techniques for the technical and economic justification of design solutions; carry out financial and economic planning engineering project; draw up technical specifications for the development of a radio engineering system from the point of view of technical and economic indicators. In this case, minor errors, inaccuracies, difficulties in analytical operations, and the transfer of knowledge and skills to new, non-standard situations may be allowed. Competencies have been developed.
Not credited	One or more types of academic work provided for by the curriculum have not been completed. The student does not demonstrate theoretical knowledge, is unable to use methodological techniques for the technical and economic justification of design solutions; is unable to carry out financial and economic planning of an engineering project; is unable to draw up a technical assignment for the development of a radio engineering system from the point of view of technical and economic indicators and is unable to quickly respond to clarifying questions, experiences

Rating scale	Description
	significant difficulties in operating knowledge and skills when transferring them to new situations. Competencies are not developed.

7.2.2. Criteria for assessing the student's work in practical classes

(formation of competence PC-4, indicators IPC-4.1, IPC-4.2, IPC-4.3) **"5" (excellent):** the student actively participated in the discussion of the topic of the practical assignment, provided for by the plan of practical classes; used methodological techniques of technical and economic justification of design solutions; applied financial and economic planning of the engineering project; drew up a technical assignment for the development of a radio engineering system from the point of view of technical and economic indicators. The student answered all test questions clearly and without errors, actively worked in practical classes; presented an abstract and made a report on the chosen topic.

"4" (good):the student participated in the discussion of the topic of the practical assignment, provided for by the plan of practical classes; the student, with corrective comments from the teacher, used methodological techniques for the technical and economic justification of design solutions; applied financial and economic planning of the engineering project; drew up a technical assignment for the development of a radio engineering system from the point of view of technical and economic indicators. The student answered all the test questions, worked quite actively during practical classes; presented an abstract, but did not speak.

"3" (satisfactory):the student participated in the discussion of the topic in fragments practical assignment, provided by the plan of practical classes; the student with corrective comments of the teacher used methodological techniques of technical and economic justification of design solutions; compiled a technical assignment for the development of a radio engineering system from the point of view of technical and economic indicators; the student answered some control questions with comments; did not submit an abstract.

"2" (unsatisfactory):the student did not participate in the discussion of the issues practical assignments provided for in the practical lesson plan; the student did not use the methodological techniques for the technical and economic justification of design solutions; did not draw up a technical assignment for the development of a radio engineering system from the point of view of technical and economic indicators; the student answered the test questions with errors or did not answer the test questions; did not submit an abstract.

7.2.3. Test results evaluation criteria

There is no testing for the Project Management course.

7.3 Evaluation tools

7.3.1 Current control

(formation of competence PC-4, indicators IPC-4.1, IPC-4.2, IPC-4.3)

Sample list of questions for a seminar/practical lesson

1. The impact of project-based learning on professional competitiveness.
2. What is a pilot project?
3. What is the role of business planning in project management.
4. Stakeholders as participants in the external environment of project activities.
5. List the main patterns of forming a project team.

6. How do risks influence the project implementation process?
7. How to manage the project life cycle.
8. What is the social effect of the project implementation?
9. How is the Gunn diagram used in project time management?
10. Break-even analysis and its application in project management.
11. How a project marketing strategy is developed and budget is drawn up.
12. What is the economic effect of the project implementation?
13. What is marketing support for a project?
14. What is a project? What is the historical aspect of project management?
15. What tools and methods of time management in performing specific tasks, projects, and achieving set goals are known to you?
16. How are the priorities of one's own activities, personal development and professional growth expressed in project activities?
17. How is the attractiveness of a business plan assessed for investors?
18. How project activities are organized.
19. List the main patterns of formation of a project team.
20. How is the organizational culture of the project expressed?
21. Name the main technologies for time planning in project activities.
22. What is a project risk portfolio?
23. List the types of management decisions.
24. What operational management decisions are you aware of?
25. Name the main patterns and stages of project completion.
26. How is marketing support for the project implemented?

Sample topics for a paper/essay

1. Classification of projects
2. Project management and project activities in the modern world
3. The project as a way to satisfy the social needs of society.
4. Priorities of one's own activities, personal development and professional growth in project activities.
5. Readiness to build a professional career and determine a strategy for professional development based on an assessment of labor market requirements, educational services market offers, and taking into account personal capabilities and preferences.
6. External and internal environment of the project: possibilities of formation and management.
7. Basic technologies for making management decisions
8. Promising management decisions and their implementation in project activities.
9. Project team life cycle.
10. Basic technologies of time planning in project management.
11. Formation of a project risk portfolio, their assessment and modern project risk management technologies.
12. The main stages of the project life cycle, their characteristics and functions.
13. Project life cycle management in practice.
14. Six components of marketing support for a project.
15. The project as a system, its structure and documentation: project map, project passport.
16. Business plan: types, content, sections and characteristics.
17. The project team and the social roles of its participants.
18. Time as one of the main resources of the project.
19. Project time constraints, Gantt chart.
20. Acceptable/unacceptable risk indicators and project risk assessment.
21. Evaluation of project effectiveness: modern methods of its calculation.

22. Management decisions in the project management process.
23. Assortment planning and analysis of assortment policy in project management.
24. Making pricing decisions as a component of a management decision.
25. Feasibility study of design solutions and technical specifications for the development of a radio engineering system from the point of view of technical and economic indicators. 26. Methodological techniques for the feasibility study of design solutions.
27. Financial and economic planning of an engineering project.
28. Technical specifications for the development of a radio engineering system from the point of view of technical and economic indicators.

In agreement with the teacher, the student can propose his/her own topic for the paper/essay.

Sample overview practical lesson (option 1): Place and role of project management science

1. Management is the process of influencing any object to achieve necessary results. In modern cybernetics (the science of managing complex systems), there are four classes of management:

– in inanimate nature (technical systems);

- biological systems; - virtual systems

- social systems.

What are the similarities and contrasts between the management of these systems? Which of the above systems is the most difficult to manage and why?

2. Any control system is divided into two subsystems: control and controlled. To implement management functions, the control subsystem must have the necessary resources (material, labor, financial) to ensure the implementation of management influences. At the same time, the control system implies the presence of a structure, organization and control mechanism. Arrange them in order of importance.

What is the difference between these concepts? Which control element will be dominant for you? Argue your point of view.

3. Effective management is based on a system of economic laws, patterns, principles and methods of management in a market economy. Explain the meaning and content of each of them.

Which of them seems to you to be decisive for achieving the set goals of project management: laws, regularities, principles or management methods?

4. To improve the quality of training of specialists in the field of project management (as in any other area) the organization of the educational process is of fundamental importance. Education has two goals: social and professional. The social goal is to reproduce culture, effectively increase the spiritual potential of the nation. The professional goal of education is to ensure the training of personnel and scientific and technical potential to improve the efficiency and competitiveness of Russian companies. An important principle for improving the educational process at Mospolitekh is to improve the quality of training for future bachelors of the training program 38.03.01 "Economics" profile "Economics of enterprises and organizations".

What forms of training in the educational process do you consider the most appropriate and effective? Analyze the types of practical classes that are most capable of evoking in students the desire to activate their thinking and demonstrate their creative abilities. What forms of interaction between the university and stakeholders could you offer in order to obtain practical skills in the field of project management by students?

Sample overview practical lesson (option 2): Project as an object of management 1. If I were the director...

Imagine yourself as the head of your company. Assuming you know the strategic goal of your business, come up with several project ideas that would correspond to it. The main requirements are maximum realism from your point of view as a director, predictability in Time, attractiveness, a limited number of controllable parameters, a certain beginning or end. Prepare a brief description of the initiated project, paying attention to the life cycle, phases, gateways, restrictions, project parameters. Model possible arguments for and against launching the project.

2.Three common definitions of the term "project":

A project is a unique process consisting of a set of interrelated and controllable activities with start and finish dates and undertaken to achieve the objective of conforming to specified requirements, including constraints of time, cost and resources. (ISO/TR 10006: 1997 (E). Quality Management – Guidelines to quality in project management – p. 1.).

A project is a unique set of interrelated activities (works) with specific start and finish dates, designed to successfully achieve a common goal. (AIPM – Australian Institute for Project Management, National Competence Standard for Project Management – Guidelines 1996 – p. 18.).

A project is a unique set of coordinated activities (works) with defined start and finish points, undertaken by an individual or organization to achieve specific goals with established deadlines, costs and performance parameters. (British Standard BS 6079-1:2000. Project management- Part 1: Guide to Project management- p.2.).

Which of the presented points of view most fully defines the meaning of the concept of "project"? Argue your point of view.

3.Test yourself by answering the questions and marking the corresponding letter:

No.	Statement	Right	Wrong
1	A project is a permanent enterprise or some kind of permanent activity.	A	B
2	Management quality is not important for projects	A	B
3	Delivering a project on time is an important aspect of project management.	A	B
4	Completing the project within the budget is not important	A	B
5	Project management is no different from other areas of management	A	B
6	The temporary nature of a project poses unique challenges for project managers.	A	B
7	The project parameters triangle includes the team, the project budget and its duration.	A	B
8	Classification projects Very important For project-oriented company and plays a special role in project portfolio management	A	B
9	Project life cycle gateways are a kind of filters that can be passed through only when intermediate goals are achieved and intermediate results are obtained.	A	B
10	The project life cycle includes the following sequence of phases: initiation, completion and implementation	A	B

Correct answers: 1B, 2B, 3A, 4B, 5B, 6A, 7B, 8A, 9A, 10B.

4.Define the difference between functional, operational and project management activities in the organization.

In an organization, various works are performed to achieve a number of goals. Usually, the works can be represented as projects or as operations. In this case, the activity is called operational. The project product can be material (for example, new technical equipment for wagons), or immaterial (training of workers), or be a combination of material and immaterial objects. The uniqueness of a product means either its significant differences from other similar products, or differences in the conditions in which it is created. In general, the activity of any enterprise or organization can be defined as either functional or project-based (combinations of both are possible).

What is the difference between functional, operational and project activities in an organization? Give examples of functional, operational and project activities.

7.3.2 Interim assessment

Approximate list of questions to be put to the test

1. Concept, goals and objectives of project management.
2. International and Russian project management associations.
3. Relevance of managing innovative projects.
4. Objectives and tasks of project management.
5. Concept, classification and characteristics of an innovative project.
6. Content, participants and environment of the project.
7. International and national project management standards.
8. Project life cycle: phases and stages.
9. Features of project life cycle management.
10. Project concept. Requirements for its content.
11. Project management models and strategies.
12. Strategic project management and its features.
13. Project management functions.
14. Process approach to project management.
15. Principles of effective project management.
16. Sequence of stages of project management.
17. Basic principles of forming a project team
18. Basic patterns of team development
19. Managing communications in a team.
20. Project resource provision: requirements.
21. Project analysis: structure and composition
22. Evaluation and selection of innovative ideas.
23. Criteria for evaluation and selection of projects.
24. Development of the mission, goals and objectives of the project.
25. Rules for constructing a tree of goals.
26. Expertise of innovative projects.
27. Methods of evaluation and selection of innovative projects.
28. Evaluation of the effectiveness of innovative projects.
29. Project planning processes and levels.
30. Parameters and characteristics of design works.
31. Assessment of the social significance of the project.
32. Assessment of the economic significance of the project.