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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 Poly)**

APPROVE

Vice-President

for International Affairs

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" 30 " 05 2022

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Management

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" 30 " 05 2022



WORKING PROGRAM OF THE DISCIPLINE

"Management of innovative business processes"

Field of study

38.03.02 Management

Educational program (profile)

"Business Process Management"

Qualification (degree)

Bachelor

Form of study

Part-time

Moscow 2022

1. The goals of mastering the discipline.

The main goals of mastering the discipline "Management of innovative business processes" should include the study and assimilation by students of the basics of innovative management, all components of the system and innovation management in an enterprise in the context of globalization, increased competition and post-industrial development of a number of countries using innovative development models and the development of practical skills and skills to work with innovative products and services. Knowledge of innovation management will contribute to the development of the innovation process, forecasting threatening factors and finding effective ways to overcome them in order to successfully operate an economic unit in the market.

To the main tasks mastering the discipline "Management of innovative business processes" should include:

- study of the theoretical foundations of the impact of the state on innovation;
- acquisition of skills in the analysis of innovative processes based on the generalization of world experience and taking into account Russian reality;
- development of skills for making and implementing innovative managerial decisions.

2. The place of the discipline in the structure of the EP of the bachelor's degree.

The discipline "Management of innovative business processes" is one of the elective disciplines of the cycle (B1.2.ED.4.1) of the bachelor's degree program.

"Management of innovative business processes" is interconnected logically and content-methodologically with the following disciplines and practices of the EP:

- Project management;
- Business process management;
- Management of organizational changes;
- Risk management of business processes;
- Industrial practice (pre-diploma).

3. The list of planned learning outcomes for the discipline (module), correlated with the planned results of mastering the educational program.

As a result of mastering the discipline (module), students develop the following competencies and the following learning outcomes should be achieved as a stage in the formation of the relevant competencies:

4. Competency code	As a result of mastering the educational program, the student must have	List of planned learning outcomes by discipline
PC-6	Able to form possible solutions based on the target indicators developed for them, as well as to analyze, justify and select solutions	<p>IPK-6.1.Knows visual modeling languages; systems theory; the subject area and the specifics of the organization's activities in an amount sufficient to solve the problems of business analysis; theory of interpersonal and group communication in business interaction; conflict theory; methods of collection, analysis, systematization, storage and maintenance of business analysis information; information technologies (software) used in the organization, to the extent necessary for the purposes of business analysis.</p> <p>IPK-6.2.Able to identify, register, analyze and classify risks and develop a set of measures to minimize them; formalize the results of business analysis in accordance with the chosen approaches; determine relationships and dependencies between elements of business analysis information; apply information technology to the extent necessary for the purposes of business analysis; analyze internal (external) factors and conditions affecting the organization's activities; analyze stakeholder requirements in terms of quality criteria determined by the chosen approaches; evaluate the effectiveness of the solution in terms of the selected criteria; evaluate the business feasibility of implementing the solution in terms of the selected target indicators; to model the scope and boundaries of work; to plan, organize and conduct meetings and discussions with stakeholders; use effective communication techniques.</p> <p>IPK-6.3.Has the skills to identify, collect and analyze business analysis information to form possible solutions; descriptions of possible solutions; analysis of decisions in terms of achieving target indicators of decisions; assessment of the resources needed to implement the solutions; evaluating the effectiveness of each solution option as a ratio between the expected level of resource use and the expected value; choosing a solution for implementation as part of a group of experts.</p>

Structure and content of the discipline.

Part-time form of education.

Part-time form - 4 credit units, i.e. 144 academic hours (of which 72 hours are independent work of students).

Sections of the discipline "Management of innovative business processes" are studied in the fourth year.

Eighth semester: lectures - 36 hours, seminars - 36 hours, form of control - test.

The structure and content of the discipline "Management of innovative business processes" in terms of terms and types of work are reflected in the appendix.

The content of the sections of the discipline (formation of PC-6 competencies)

Topic 1. Subject and content of the discipline. Basic concepts.

The subject of study. Scientific and technological achievements and scientific and technological innovations: interconnection and interdependence. Innovation (innovation) as an object of management. The essence, difference and interrelation of the concepts "product", "technology", "innovation" ("innovation"), "innovation" ("innovation"), "discovery", "invention", "modification", "innovation process".

Goals and objectives of the discipline. Place and role of discipline in the system of higher professional education. Formation of an innovative culture. Relationship with other academic disciplines.

Topic 1. Methodology of the theory of innovation management. Basic concepts, methods and tools of research. The concept of innovation. Classification signs of innovations, innovations and innovative processes and their characteristics.

Topic 3. Theories of innovative development. Economic and socio-philosophical concepts of innovative development. Periodization of social development from the standpoint of the theory of innovation. Scientific and technological eras: driving forces of development and reasons for turnover.

Topic 4. The concept of technological structures. Their changes in the process of development of society. The concept of technological structure. Change of technological patterns by periods of dominance. Characteristics of modern technological structures and their development. Influence of the technological order on the strategic choice of the development of the organization.

Topic 5. Innovation processes: types, stages, essence, content. Features of product, technological and modifying innovations. Life cycles of innovation Essence and structure of the innovation process. Cyclicity of innovation processes.

Topic 6. Innovation cycles. The concept of life cycle. The main stages of the product life cycle and their characteristics. Characteristics of the stages of innovative development.

Topic 7. National innovation systems National innovation systems and knowledge economy. Basic provisions of the concept of national innovation systems. Goals, objectives and structure of the NIS. Russian and foreign experience in building a research vessel. The main elements of the innovation system: their role, functions and interaction. Goals, objectives, forms and methods of formation and implementation of the state innovation policy. Russian legislation on innovation activity. Priority directions of development of science, technology and engineering. Critical technologies. National projects in the field of innovative development. International innovation activity. A system of international organizations promoting innovative and technological development.

Topic 8. Infrastructure for innovation. The composition of the components of the innovation infrastructure. Organizations engaged in information service of innovation activity. Organizational support. Legal protection of innovation activity. Actual directions of development of the infrastructure of innovation activity.

Topic 9. Organization and management of innovation activities Commercialization of the results of scientific and technical activities: essence and features at different stages of the life cycle. The essence of diffuse processes and their main directions. Transfer of the results of scientific and technical activities at the level of organizations and states. Protection of intellectual property.

Topic 10. Basic principles of forecasting scientific and technological development. Goals and objectives of forecasting scientific and technological development. Long-term forecasting of economic development. Forecasting and making innovative decisions.

Topic 11. Intra- and inter-firm organizational forms of innovative activity. Alliances in the innovation sphere. Interfirm scientific and technical cooperation. Business incubators. Scientific and technological parks. Technopolises (science cities). Global innovation processes and features of their organization.

Topic 12. Competitiveness: concept, factors, conditions for ensuring The concept of competitiveness. The role of competitiveness in a market economy. The main factors determining the competitiveness of products and technologies. Competitiveness of brands. Brand. Competitiveness of the enterprise and its innovative activity. The strategic importance of innovations in ensuring the competitiveness of the enterprise.

Topic 13. Innovative potential of an enterprise (organization) as the most important factor of competitiveness. Characteristics of the innovative potential of the enterprise (organization). Strategies for innovative development of enterprises and approaches to their formation and implementation.

Topic 14. Management of innovative activities in an enterprise (in an organization, institution) Features of the regulation of innovation processes at the macro- and micro-levels of management. Features of the organization of payment and stimulation of labor in innovation. Resistance of the personnel of the enterprise to innovations. Conflicts in the process of innovative development. Methods and approaches to overcome resistance to innovation and conflict resolution. Team building and leadership in the implementation of innovative projects and programs for innovative development of enterprises. Marketing in the innovation sphere.

Topic 15. Designing business processes for innovation. Organization of monitoring of the innovation process. Types of tools used at various stages of the life cycle of an innovative project. Unified information model of the project and CALS-technologies. Instrumental tools for planning and monitoring the progress of an innovative project. Tools for financial analysis and resource management of an innovative project.

Topic 16. Investments in innovation. Risks of innovative activity. Ways of organizing the financing of innovation activities. Forms of financing. Sources of financing and crediting. Indicators of commercial effectiveness of innovation. Uncertainty and risks of innovative activity. Classification of risks of innovative activity. Methods of risk analysis. Risk management in innovation activities.

Topic 17. Management of innovative projects and programs

Project management as the main technology for implementing innovations. The concept of the project. Development of an innovative project and ensuring its implementation. The project as an object of control. Planning and project management based on the process approach. Classification of projects. The structure of the project and its environment. Features of innovative projects. Project life cycle. The main stages and stages of the project. Project implementation team. The key role of the project manager. Interaction between leader and team. Motivation of project participants.

Topic 18. Entrepreneurship in the innovation sphere

Innovative business idea. Innovative proposal. Innovative request. Mechanisms for ensuring communications in the innovation sphere: exchanges and trading platforms of intellectual resources. Mediation in the innovation sphere. Venture business. Innovation as a specific commodity. Features of promotion of innovations in the market. Sales forecast for a new product or service. Technical marketing (marketing in the early stages of the innovation life cycle). Features of organizing an advertising campaign and preparing a sales network for the sale of a new product or service. Pricing for new products (services).

**Seminar plan
(formation of PC-6 competencies)**

Seminar 1. Management of innovative business processes: essence, emergence and development. Trends and varieties of development. Development management. Management of innovative business processes: emergence, formation, main features. The content of innovation management. Modern problems of innovation management and ways to overcome them. Innovative entrepreneurship as a sphere of application of innovative management. Methods of organizing innovative management Foreign experience of innovative entrepreneurship in the service sector. Management of innovative business processes at service enterprises.

Questions for the seminar:

What is the meaning of the development of the economic system. What are the development factors?

What is Management of innovative business processes. What are the levels of innovation management?

What are the features of management at the level of the enterprise and administrative entities?

What is the content of innovation management?

What are the features of innovation management in foreign enterprises?

Seminar 2. Technological innovations as an object of innovation management. The concept of technology and technological innovation. Innovation as a factor in the economic activity of an enterprise. Life cycle of innovation. The theory of innovative entrepreneurship by J. Schumpeter. Creation, selection, adaptation and diffusion of innovations. Classification of innovations. Technology transfer. Commercialization of innovations. Innovative environment of the enterprise. The role of innovation in modern entrepreneurial activity.

Questions for the seminar:

What is the difference between technology and technological innovation?

What is the role of innovation versus financial and human resources in enterprise development?

What is the "innovation life cycle"?

What is the main idea of the theory of innovative entrepreneurship by J. Schumpeter?

What is the classification of innovations?

What is the difference between technological transfer and technological diffusion?

What is the technology commercialization process?

What are the main characteristics of the innovative environment of the enterprise?

What is the role of innovation in increasing the competitiveness of an enterprise in the market?

Seminar 3. Functions, methods and models of innovation management

Innovation process as an object of control. Functions of innovation management. Protection of innovations. Methods of innovation management. Concept and classification of innovative processes. The main stages of innovation processes. Parameters of innovation processes. Diffusion and intraorganizational models: characteristics, features, phases of implementation. Information support of innovative processes. Making managerial decisions in innovation management.

Questions for the seminar:

What are the functions of innovation management?

What are “intellectual property rights” and what is their place in the innovative development of an enterprise?

What are the ways to protect innovations?

What is the classification of innovation processes?

Diffusion and intraorganizational models: what are the main differences?

Seminar4. Technology transfer and protection of intellectual property. The knowledge economy and the growing role of innovation diffusion. Transfer of innovations as a market regulator of diffuse processes. Knowledge management as an element of innovative activity in an enterprise. Forms of innovation transfer. Intellectual property management in the process of innovation management. Innovations as IP objects. Protection of innovations as objects of industrial property. The role of patent attorneys. The specificity of the protection of rights to individual objects of industrial property. Legal protection of confidential information, know-how as its type. Regulation of the use of service inventions

Questions for the seminar:

Features of technology transfer management.

Scanning and monitoring technologies.

Types of agreements in technology transfer.

Main types of license agreements.

Seminar 5. Organization and management of innovative activities at the enterprise. Forms of innovation management. Organization of innovation management. Big business in the innovation sphere. Advantages of small and medium-sized enterprises in the field of innovation. Firms-innovators and firms-imitators. Integration of science and production: territorial scientific and industrial complexes (science parks, science cities and innovation cities) and technological cooperation (research centers, research and university consortiums). innovative alliances. Innovation process as an object of control. The system of management of innovative activity at the enterprise. Creation of innovative divisions at the enterprise. Project management of innovation activity. Diffusion of innovations. Information support of the innovation management process. Protection of innovations. Stimulation of staff creativity and innovation.

Questions for the seminar:

What are the forms of innovation management?

What is the difference between the innovative development of large and small companies?

What is the difference between innovators and imitators?

What is an "innovation alliance"?

What is the structure of innovation management in an enterprise?

What is the main content of innovation project management?

What is innovation diffusion and what is the role of innovation diffusion in increasing commercial impact?

What role does staff creativity play in the innovative development of an enterprise?

What are the methods of stimulating innovative activity in the enterprise?

Seminar 6. Organization of the process of mastering innovations. Tasks and principles of organizing the development of the production of new products and services. Methods of organizing the transition to the production of new products and services. The system of organizing the accelerated development of new products and services. Development of programs and projects of innovations. Features of the organization of the accelerated development of products and services in various branches of economic activity. Integration of developers, producers and consumers of innovations.

Questions for the seminar:

What are the tasks and methods of organizing the transition to the production of new products and services?

What are the principles for developing programs and innovation projects?

What are the reasons and what are the forms of interaction between developers, producers and consumers of innovations

Seminar 7. Cost management for innovation activities. The essence and content of the cost of innovation. One-time and ongoing costs. The cost structure and its features in innovation. Research and development (R&D) costs. The cost of training qualified personnel. Cost accounting. Decrease paths. Features of cost recovery in innovative activity. Planning the dynamics of costs in the development of new products. Construction of development curves. Assessment of the impact of destabilizing factors on costs in the development process.

Questions for the seminar:

What are the methods of innovation planning?

What are the features of forecasting the production process of innovative goods or services?

What is the role of foresight in the management of innovative processes in an enterprise?

What are the features of production planning and marketing of innovative products or services?

What is benchmarking and what is its role in the innovative development of an enterprise?

Seminar 8. Planning and forecasting of innovative activities Methods of innovation planning. Development of strategic and operational plans for innovation activities. Forecasting in innovation management. Benchmarking and foresight. benchmarking method. Foresight methods.

Questions for the seminar:

What are the methods of innovation planning?

What are the features of forecasting the production process of innovative goods or services?

What is the role of foresight in the management of innovative processes in an enterprise?

What are the features of production planning and marketing of innovative products or services?

What is benchmarking and what is its role in the innovative development of an enterprise?

Seminar 9. Personnel management and the culture of an innovative organization. The general model of the organization's susceptibility to innovation. Roles and positions in innovations. Staff of scientific organizations. Staff motivation. Personnel planning. Issues of formation of target groups in scientific teams.

Seminar 10. Resourcing of innovation activities. intellectual capital. Mechanisms for the formation of intellectual capital in an innovative enterprise. Protection of intellectual property. Organization of intellectual capital and advanced training processes. Features of investing in innovative activities. Sources of financing of innovation processes. The mechanism of risk financing of scientific and technical developments. Use of venture capital. Features of leasing financing in the scientific and technical sphere. Structure of sources of financing of innovative activity at the enterprise. Funding problems.

Questions for the seminar:

What is the definition of "intellectual capital"?

what are the features of the creation and management of intellectual capital in the enterprise?

What are the features of investing in the development, implementation, production and commercialization of innovations?

What are the sources of financing for innovation activities?

What is "venture financing" of innovations?

Seminar 11. Strategic management in innovation management Content and forms of strategic innovation management. Methods and means of strategic innovation management. The concept of innovation strategy, its role in a market economy. Strategy

system. Methods for choosing an innovative strategy. Domestic and foreign experience in the application of innovative strategies.

Questions for the seminar:

What is Strategic Innovation Management?

What are the methods and means of strategic innovation management?

What are the methods for choosing an innovation strategy?

What elements of foreign experience in the formation of innovative strategies can be acceptable in our country?

Seminar 12. Risk management in innovation

Risk classification. Basic concepts of risk management. Goals and objectives of risk management. Risk management methods. General assessment of the risk of an innovative project. The concept of risk in innovation management. Types of risk. Evaluation of the expected loss of investor funds. The mechanism for limiting economic risk when investing in innovation. Proactive economic risk management.

Questions for the seminar:

What are the types of risks in innovation?

What are the objectives of risk management?

What are the methods for assessing the potential risks of an innovative investor?

What are the directions for reducing risks in innovation?

Seminar 13. Innovation Marketing. Innovation marketing concept. Types of innovative marketing. Monitoring of the market of scientific and technical products. Marketing research methods: traditional and original methods. Strategic and operational innovative marketing. Stages of creating a new product. Causes of new product failures.

Questions for the seminar:

LOCATOR method,

Conjoint-Analysis,

Building a "House of Quality"

Seminar 14. Efficiency of managing the innovative development of an enterprise. Methods for evaluating the economic efficiency of innovative projects. Efficiency of using innovations. General economic efficiency of innovations. Efficiency of costs for innovative activity. Efficiency of management of innovative development of the enterprise. Questions for the seminar:

What is the economic efficiency of an innovative enterprise?

What are the methods for evaluating the economic efficiency of innovative projects?

How to evaluate the cost effectiveness of innovation activities.

Seminar 15. Management of innovation activities in the service sector

Features of management of innovative development of a service enterprise. Classification of innovations by spheres of service. Innovative potential of the service

organization. Organization of innovative development and management of innovative processes at service enterprises.

Questions for the seminar:

What are the features of innovative activity in service enterprises?

What are the features of innovation management in a service enterprise?

What is the difference between innovation management in enterprises of various service sectors?

How to determine the innovative potential of a service organization?

Seminar 16. State regulation of innovation processes

The role of the state in stimulating innovation. Functions of state bodies in the innovation sphere. State innovation policy. Creation of a favorable innovation climate. Training of personnel for innovative activity. Creation of an innovative infrastructure. Federal target programs. Contests of innovative projects. Mode of financing innovative activities of enterprises. The role of the state in international scientific and technical cooperation. State innovation policy in foreign countries.

Questions for the seminar:

What is the need for state participation in the innovative activities of enterprises?

What are the areas of state participation in innovation activities?

What are the mechanisms for stimulating innovation activity on the part of the state?

How to assess the effectiveness of state management of innovative development of enterprises?

What are the financial and non-financial mechanisms of state stimulation of innovation activity?

Seminar 17.International aspects of innovation activity. The need for innovative development of foreign economic activity. Interdependence of innovative activity and knowledge-intensive export of goods and services.

Questions for the seminar:

What is the reason for the need for innovative development of foreign economic activity?

What is the national importance of innovation for the country's economy?

How does innovation affect the change in the structure of the economy?

How do innovations affect the national security of a state?

Seminar 18. Final examination

5. Educational technologies

The methodology of teaching the discipline "Management of innovative business processes" and the implementation of a competency-based approach in the presentation

and perception of the material provides for the use of the following active and interactive forms of conducting group, individual, classroom classes in combination with extracurricular work in order to form and develop the professional skills of students:

- discussion and defense of reports on the discipline;
- preparation, presentation and discussion of presentations at seminars;
- the use of interactive forms of current control in the form of classroom and extracurricular Internet testing;
- holding master classes of experts and specialists in innovation management.

6. Evaluation tools for current monitoring of progress, intermediate certification based on the results of mastering the discipline and educational and methodological support for students' independent work.

In the learning process, the following assessment forms of independent work of students, assessment tools for monitoring progress and intermediate assessments are used:

- report on the topic: "Management of innovative business processes" (individually for each student);
- preparation for performance of control works.

Evaluative means of monitoring progress include assignments for tests, questions for the exam.

When performing current control, it is possible to use test material. Samples of control questions and tasks for conducting current control are given in the appendix. When implementing the undergraduate program, the organization has the right to use e-learning and distance learning technologies. All materials are placed in the LMS of the Moscow Poly (<https://online.mospolytech.ru/>).

When teaching people with disabilities, e-learning and distance learning technologies should provide for the possibility of receiving and transmitting information in forms accessible to them.

6.1. Fund of assessment tools for conducting intermediate certification of students in the discipline (module).

6.1.1. A list of competencies indicating the stages of their formation in the process of mastering the educational program.

As a result of mastering the discipline (module), the following competencies are formed:

Competency code	As a result of mastering the educational program, the student must have
PC-6	Able to form possible solutions based on the target indicators developed for them, as well as to analyze, justify and select solutions.

In the process of mastering the educational program, these competencies, including their individual components, are formed in stages during the development of disciplines (modules), practices by students in accordance with the curriculum and calendar schedule of the educational process.

6.1.2. Description of indicators and criteria for assessing competencies formed on the basis of the results of mastering the discipline (module), description of assessment scales

An indicator of competency assessment at various stages of their formation is the achievement by students of the planned learning outcomes in the discipline (module).

PC-6 -Able to form possible solutions based on the target indicators developed for them, as well as to analyze, justify and select solutions.

Index	Evaluation criteria			
	2	3	four	5
IPK-6.1. Knows visual modeling languages; systems theory; the subject area and the specifics of the organization's activities in an amount sufficient to solve the problems of business analysis; theory of interpersonal and group communication in business interaction; conflict theory; methods of collection, analysis, systematization, storage and maintenance of business analysis information; information technologies (software) used in the organization, to the extent necessary for the purposes of business analysis.	The student demonstrates the complete absence or insufficient compliance of the following knowledge: visual modeling languages; systems theory; the subject area and the specifics of the organization's activities in an amount sufficient to solve the problems of business analysis; theory of interpersonal and group communication in business interaction; conflict theory; methods of collection, analysis, systematization, storage and maintenance of business analysis information; information technologies (software) used in the organization, to the extent necessary for the purposes of business analysis.	The student demonstrates incomplete compliance with the following knowledge: visual modeling languages; systems theory; the subject area and the specifics of the organization's activities in an amount sufficient to solve the problems of business analysis; theory of interpersonal and group communication in business interaction; conflict theory; methods of collection, analysis, systematization, storage and maintenance of business analysis information; information technologies (software) used in the organization, to the extent necessary for the purposes of business analysis.	The student demonstrates partial compliance with the following knowledge: visual modeling languages; systems theory; the subject area and the specifics of the organization's activities in an amount sufficient to solve the problems of business analysis; theory of interpersonal and group communication in business interaction; conflict theory; methods of collection, analysis, systematization, storage and maintenance of business analysis information; information technologies (software) used in the organization, to the extent necessary for the purposes of business analysis.	The student demonstrates full compliance with the following knowledge: visual modeling languages; systems theory; the subject area and the specifics of the organization's activities in an amount sufficient to solve the problems of business analysis; theory of interpersonal and group communication in business interaction; conflict theory; methods of collection, analysis, systematization, storage and maintenance of business analysis information; information technologies (software) used in the organization, to the extent necessary for the purposes of business analysis.

<p>IPK-6.2. Able to identify, register, analyze and classify risks and develop a set of measures to minimize them; formalize the results of business analysis in accordance with the chosen approaches; determine relationships and dependencies between elements of business analysis information; apply information technology to the extent necessary for the purposes of business analysis; analyze internal (external) factors and conditions affecting the organization's activities; analyze stakeholder requirements in terms of quality criteria determined by the chosen approaches; evaluate the effectiveness of the solution in terms of the selected criteria; evaluate the business feasibility of implementing the solution in terms of the selected target indicators; to model the scope and boundaries of work; to plan, organize and conduct meetings and discussions with stakeholders; use effective communication techniques.</p>	<p>The student does not know how to identify, register, analyze and classify risks and develop a set of measures to minimize them; formalize the results of business analysis in accordance with the chosen approaches; determine relationships and dependencies between elements of business analysis information; apply information technology to the extent necessary for the purposes of business analysis; analyze internal (external) factors and conditions affecting the organization's activities; analyze stakeholder requirements in terms of quality criteria determined by the chosen approaches; evaluate the effectiveness of the solution in terms of the selected criteria; evaluate the business feasibility of implementing the solution in terms of the selected target indicators; to model the scope and boundaries of work; to plan, organize and conduct meetings and discussions with stakeholders; use effective communication techniques.</p>	<p>The student demonstrates incomplete compliance with the following skills: identify, register, analyze and classify risks and develop a set of measures to minimize them; formalize the results of business analysis in accordance with the chosen approaches; determine relationships and dependencies between elements of business analysis information; apply information technology to the extent necessary for the purposes of business analysis; analyze internal (external) factors and conditions affecting the organization's activities; analyze stakeholder requirements in terms of quality criteria determined by the chosen approaches; evaluate the effectiveness of the solution in terms of the selected criteria; evaluate the business feasibility of implementing the solution in terms of the selected target indicators; to model the scope and boundaries of work; to plan, organize and conduct meetings and discussions with stakeholders; use effective communication techniques.</p>	<p>The student demonstrates partial compliance with the following skills: identify, register, analyze and classify risks and develop a set of measures to minimize them; formalize the results of business analysis in accordance with the chosen approaches; determine relationships and dependencies between elements of business analysis information; apply information technology to the extent necessary for the purposes of business analysis; analyze internal (external) factors and conditions affecting the organization's activities; analyze stakeholder requirements in terms of quality criteria determined by the chosen approaches; evaluate the effectiveness of the solution in terms of the selected criteria; evaluate the business feasibility of implementing the solution in terms of the selected target indicators; to model the scope and boundaries of work; to plan, organize and conduct meetings and discussions with stakeholders; use effective communication techniques.</p>	<p>The student demonstrates full compliance with the following skills: identify, register, analyze and classify risks and develop a set of measures to minimize them; formalize the results of business analysis in accordance with the chosen approaches; determine relationships and dependencies between elements of business analysis information; apply information technology to the extent necessary for the purposes of business analysis; analyze internal (external) factors and conditions affecting the organization's activities; analyze stakeholder requirements in terms of quality criteria determined by the chosen approaches; evaluate the effectiveness of the solution in terms of the selected criteria; evaluate the business feasibility of implementing the solution in terms of the selected target indicators; to model the scope and boundaries of work; to plan, organize and conduct meetings and discussions with stakeholders; use effective communication techniques.</p>
<p>IPK-6.3. Has the skills to identify, collect and analyze business analysis information to form possible solutions;</p>	<p>The student does not possess or insufficiently possesses the skills to identify, collect and analyze business analysis</p>	<p>The student has little skills in identifying, collecting and analyzing business analysis information to form possible</p>	<p>The student partially owns the Methods of effective project management, the program for the introduction of</p>	<p>The student fully owns the skills of identifying, collecting and analyzing business analysis information to form possible solutions;</p>

descriptions of possible solutions; analysis of decisions in terms of achieving target indicators of decisions; assessment of the resources needed to implement the solutions; evaluating the effectiveness of each solution option as a ratio between the expected level of resource use and the expected value; choosing a solution for implementation as part of a group of experts.	information to form possible solutions; descriptions of possible solutions; analysis of decisions in terms of achieving target indicators of decisions; assessment of the resources needed to implement the solutions; evaluating the effectiveness of each solution option as a ratio between the expected level of resource use and the expected value; choosing a solution for implementation as part of a group of experts.	solutions; descriptions of possible solutions; analysis of decisions in terms of achieving target indicators of decisions; assessment of the resources needed to implement the solutions; evaluating the effectiveness of each solution option as a ratio between the expected level of resource use and the expected value; choosing a solution for implementation as part of a group of experts. The learner experiences significant difficulties in applying skills in new situations.	technological and product innovations or the program of organizational changes, the skills are mastered, but minor errors, inaccuracies, difficulties are made in analytical operations, transferring skills to new, non-standard situations.	descriptions of possible solutions; analysis of decisions in terms of achieving target indicators of decisions; assessment of the resources needed to implement the solutions; evaluating the effectiveness of each solution option as a ratio between the expected level of resource use and the expected value; choosing a solution for implementation as part of a group of experts.
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Scales for assessing the results of intermediate certification and their description:

Form of intermediate attestation: test.

Intermediate attestation of students in the form of a test is carried out based on the results of the implementation of all types of educational work provided for by the curriculum for a given discipline (module), while taking into account the results of current monitoring of progress during the semester. The assessment of the degree of achievement by students of the planned learning outcomes in the discipline (module) is carried out by the teacher conducting classes in the discipline (module) by the method of expert assessment. Based on the results of the intermediate attestation for the discipline (module), the mark “passed”, “failed” is set.

Only students who have completed all types of educational work provided for by the work program in the discipline "Management of innovative business processes" (test, test, report) are allowed to intermediate certification

<i>Evaluation scale</i>	<i>Description</i>
<i>Passed</i>	<i>All types of educational work provided for by the curriculum were completed. The student demonstrates the correspondence of knowledge, skills and abilities given in the tables of indicators, operates with the acquired knowledge, skills, skills, applies them in situations of increased complexity. In this case, minor errors, inaccuracies, difficulties in analytical</i>

	<i>operations, transferring knowledge and skills to new, non-standard situations can be made.</i>
<i>Not credited</i>	<i>One or more types of educational work provided for by the curriculum have not been completed. The student demonstrates incomplete correspondence of knowledge, skills and abilities given in the tables of indicators, significant errors are made, the lack of knowledge, skills and abilities is manifested in a number of indicators, the student experiences significant difficulties in operating knowledge and skills when transferring them to new situations.</i>

The evaluation funds are presented in annex 1 to the work program.

7. Educational, methodological and information support of the discipline.

Main literature:

1. Khotyashева, O. M. Innovative management: textbook and workshop for universities - 3rd ed., revised. and additional - M.: Yurait Publishing House, 2021. - 326 p. - (Higher education). - ISBN 978-5-534-00347-5. — Text: electronic // Educational platform Urayt [website]. — URL: <https://urait.ru/bcode/468791>

Additional literature:

1. Alekseeva M. B. Analysis of innovation activity: textbook and workshop for universities - 2nd ed., revised. and additional - M: Yurayt Publishing House, 2021. - 337 p. - (Higher education). — ISBN 978-5-534-14499-4. — Text: electronic // Educational platform Urayt [website]. — URL: <https://urait.ru/bcode/477752>

2. Polyakov N. A. Management of innovative projects: textbook and workshop for universities - M.: Yurayt Publishing House, 2021. - 330 p. - (Higher education). - ISBN 978-5-534-00952-1. — Text: electronic // Educational platform Urayt [website]. — URL: <https://urait.ru/bcode/468930>

Software and Internet Resources:

- Office applications, Microsoft Office 2013 (or lower) - Microsoft Open License. License No. 61984042

eight. Logistics support of discipline.

Audience for lectures and seminars of the general fund. Training tables with benches, classroom board, portable multimedia complex (projector, projection screen, laptop). Teacher's workplace: table, chair.

9. Guidelines for students when working on lecture notes during the lecture

Lecture - a systematic, consistent, monologue presentation by the teacher of educational material, as a rule, of a theoretical nature. When preparing a lecture, the teacher is guided by the working program of the discipline. In the course of lectures, it is recommended to take notes, which will later allow you to recall the studied educational material, supplement the content during independent work with literature, and prepare for the exam.

You should also pay attention to categories, formulations that reveal the content of certain phenomena and processes, scientific conclusions and practical recommendations, positive experience in oratory. It is advisable to leave fields in the working notes on

which to make notes from the recommended literature, supplementing the material of the lecture heard, as well as emphasizing the particular importance of certain theoretical positions.

Lecture conclusions summarize the teacher's reflections on educational issues. The teacher provides a list of used and recommended sources for studying a particular topic. At the end of the lecture, students have the opportunity to ask questions to the teacher on the topic of the lecture. When lecturing on the discipline, electronic multimedia presentations can be used.

Guidelines for students when working at the seminar

Seminars are implemented in accordance with the working curriculum with consistent study of the topics of the discipline. In preparation for the seminars, the student is recommended to study the basic literature, get acquainted with additional literature, new publications in periodicals: magazines, newspapers, etc. In this case, the recommendations of the teacher and the requirements of the curriculum should be taken into account. It is also recommended to refine your lecture notes by making appropriate entries in it from the literature recommended by the teacher and provided by the curriculum. Abstracts should be prepared for presentations on all educational issues submitted to the seminar.

Since the student's activity in seminars is the subject of monitoring his progress in mastering the course, preparation for seminars requires a responsible attitude. In interactive classes, students should be active.

Guidelines for students on the organization of independent work

Independent work of students is aimed at independent study of a separate topic of the academic discipline. Independent work is mandatory for each student, its volume is determined by the curriculum. During independent work, the student interacts with the recommended materials with the participation of the teacher in the form of consultations. To perform independent work, methodological support is provided. The electronic library system (electronic library) of the university provides the possibility of individual access for each student from any point where there is access to the Internet.

10. Methodological recommendations for the teacher

(Guidelines for making presentations)

A presentation (from the English word - presentation) is a set of color slide pictures on a specific topic, which is stored in a special format file with the PP extension. The term "presentation" (sometimes called "slide film") is associated primarily with the

information and advertising functions of pictures that are designed for a certain category of viewers (users).

Multimedia computer presentation is:

- dynamic synthesis of text, image, sound;
- the most modern software interface technologies;
- interactive contact of the speaker with the demonstration material;
- mobility and compactness of information carriers and equipment;
- ability to update, supplement and adapt information;
- low cost.

Rules for the design of computer presentations

General Design Rules

Many designers argue that there are no laws and rules in design. There are tips, tricks, tips. Design, like any kind of creativity, art, like any way of some people to communicate with others, like language, like thought, will bypass any rules and laws.

However, there are certain recommendations that should be followed, at least for novice designers, until they feel the strength and confidence to create their own rules and recommendations.

Font design rules:

- Serif fonts are easier to read than sans-serif fonts;
- Capital letters are not recommended for body text.
- Font contrast can be created through: font size, font weight, style, shape, direction, and color.
- Rules for choosing colors.
- The color scheme should consist of no more than two or three colors.
- There are incompatible color combinations.
- Black color has a negative (gloomy) connotation.
- White text on a black background is hard to read (inversion is hard to read).

Presentation design guidelines

In order for the presentation to be well perceived by the audience and not cause negative emotions (subconscious or completely conscious), it is necessary to follow the rules for its design.

The presentation involves a combination of information of various types: text, graphics, musical and sound effects, animation and video clips. Therefore, it is necessary to take into account the specifics of combining fragments of information of various types. In addition, the design and demonstration of each of the listed types of information is also subject to certain rules. So, for example, for textual information, the choice of font is important, for graphic information - brightness and color saturation, for their best joint perception, optimal relative position on the slide is necessary.

Consider recommendations for the design and presentation of various types of materials on the screen.

Formatting text information:

- font size: 24-54 pt (headline), 18-36 pt (plain text);
- font color and background color should contrast (the text should be well read), but not hurt the eyes;
- font type: smooth sans-serif font for body text (Arial, Tahoma, Verdana), decorative font can be used for heading if it is legible;
- italics, underlining, bold, capital letters are recommended to be used only for semantic highlighting of a text fragment.

Formatting graphic information:

- drawings, photographs, diagrams are designed to supplement textual information or convey it in a more visual form;
- it is desirable to avoid drawings in the presentation that do not carry a semantic load if they are not part of the style design;
- the color of graphic images should not contrast sharply with the overall style of the slide;
- illustrations are recommended to be accompanied by explanatory text;
- if a graphic image is used as a background, then the text on this background should be well readable.

The content and location of information blocks on the slide:

- there should not be too many information blocks (3-6);
- the recommended size of one information block is no more than 1/2 of the slide size;
- it is desirable to have on the page blocks with different types of information (text, graphs, diagrams, tables, figures) that complement each other;
- keywords in the information block must be highlighted;
- information blocks should be placed horizontally, blocks related in meaning - from left to right;
- the most important information should be placed in the center of the slide;
- the logic of presenting information on slides and in the presentation should correspond to the logic of its presentation.

In addition to the correct arrangement of text blocks, one must not forget about their content - the text. In no case should it contain spelling errors. You should also take into account the general rules for formatting the text.

After creating a presentation and its design, you need to rehearse its presentation and your performance, check how the presentation will look like as a whole (on a computer screen or projection screen), how quickly and adequately it is perceived from

different audience locations, under different lighting conditions, noise accompaniment, in an environment as close as possible to the real conditions of the performance.

The work program was compiled on the basis of the Federal State Educational Standard of Higher Education in the direction of training bachelors on March 38, 02 "Management", approved by order of the Ministry of Education and Science of the Russian Federation of August 12, 2020 No. 970 (Registered in the Ministry of Justice of Russia on August 25, 2020 No. 59449).

The program was made by:

Head of the Department "Management"

Candidate of Economics, Associate Professor /Alenina E.E./



Candidate of Economics, Associate Professor of the Department of Management /
Korotun O.N. /



The program was approved at a meeting of the department "Management"

August 29, 2022, Protocol No. 1

Head of the Department "Management"

k. e. Sc., Associate Professor / Alenina E.E. /



**The structure and content of the discipline "Management of innovative business processes"
in the direction of preparation 38.03.02 "Management",
educational program "Business Process Management" (part-time)**

n/n	Chapter	Semester	A week semester	Types of educational work, including independent student work, and labor intensity in hours					Types of independent work students					Forms of attestat ion		
				L	F/N	Lab	SRS	DAC	K.R.	K.P.	T	DC	K/p	E	Z	
one	Topic 1. Subject and content of the discipline. Basic concepts.	eight	one	2	2		four									
2	Topic 2. Methodology of the theory of innovation management	eight	2	2	2		four					+				
3	Topic 3. Theories of innovative development	eight	3	2	2		four					+				
four	Topic 4. The concept of technological structures	eight	four	2	2		four					+				
5	Topic 5. Innovation processes: types, stages, essence, content	eight	5	2	2		four					+				
6	Topic 6. Innovation cycles	eight	6	2	2		four					+				
7	Topic 7. National innovation systems	eight	7	2	2		four					+				
eight	Topic 8. Infrastructure for innovation	eight	eight	2	2		four					+				
9	Topic 9. Organization and management of innovation activities	eight	9	2	2		four					+				
ten	Topic 10. Basic principles of forecasting scientific and technological development	eight	ten	2	2		four					+				
elev en	Topic 11. Intra- and inter-firm organizational forms of innovative activity.	eight	elev en	2	2		four					+				
12	Topic 12. Competitiveness: concept, factors, conditions for ensuring	eight	12	2	2		four					+				
13	Topic 13. Innovative potential of an	eight	13	2	2		four					+				

**MINISTRY OF SCIENCE AND HIGHER EDUCATION
RUSSIAN FEDERATION**

Federal State Autonomous Educational Institution

higher education

"MOSCOW POLYTECHNICAL UNIVERSITY"

/Moscow Polytech/

Area of study: 38.03.02 Management

EP (educational program): "Business Process Management"

Form of study: full-time, part-time

Type of professional activity: organizational and managerial

Department: "Management"

VALUATION FUND

BY DISCIPLINE

Management of innovative business processes

Composition: 1. Passport of the fund of appraisal funds

2. Description of evaluation tools:

topics of reports, assignments for tests (including a test), questions for the exam

Compiled by:

head of the department, Ph.D., Assoc. Alenina E.E.

Associate Professor, Ph.D. Korotun O.N.

Moscow, 2022

Table 1

INDICATOR OF THE LEVEL OF FORMATION OF COMPETENCES

Management of innovative business processes					
GEF VO 38.03.02 "Management"					
In the process of mastering this discipline, the student forms and demonstrates the following					
Professional competencies:					
COMPETENCES		List of components	Competence formation technology	Assessment Tool Form**	Degrees of levels of development of competencies
INDEX	FORMULATION				
PC-6	<i>Able to form possible solutions based on the target indicators developed for them, as well as to analyze, justify and select solutions</i>	IPK-6.1. Knows visual modeling languages; systems theory; the subject area and the specifics of the organization's activities in an amount sufficient to solve the problems of business analysis; theory of interpersonal and group communication in business interaction; conflict theory; methods of collection, analysis, systematization, storage and maintenance of business analysis information; information technologies (software) used in the organization, to the extent necessary for the purposes of business analysis.	lecture, independent work, seminars	T, offset	A basic level of - is able to analyze, apply skills and functions of competence in training and prepared situations Enhanced level -able to analyze, apply the skills and functions of competence in practice and in non-standard situations.

		<p>IPK-6.2. Able to identify, register, analyze and classify risks and develop a set of measures to minimize them; formalize the results of business analysis in accordance with the chosen approaches; determine relationships and dependencies between elements of business analysis information; apply information technology to the extent necessary for the purposes of business analysis; analyze internal (external) factors and conditions affecting the organization's activities; analyze stakeholder requirements in terms of quality criteria determined by the chosen approaches; evaluate the effectiveness of the solution in terms of the selected criteria; evaluate the business feasibility of implementing the solution in terms of the selected target indicators; to model the scope and boundaries of work; to plan, organize and conduct meetings and discussions with stakeholders; use effective communication techniques.</p> <p>IPK-6.3. Has the skills to identify, collect and analyze business analysis information to form possible solutions; descriptions of possible solutions; analysis of decisions in terms of achieving target indicators of decisions; assessment of the resources needed to implement the solutions; evaluating the effectiveness of each solution option as a ratio between the expected level of resource use and the expected value; choosing a solution for implementation as part of a group of experts.</p>			
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** - For abbreviations of forms of evaluation tools, see Appendix 2 to the RP.

List of evaluation tools for the discipline "Management of innovative business processes"

OS number	Name of the evaluation tool	Brief description of the evaluation tool	Presentation of the evaluation tool in the FOS
one	Test (T)	A system of standardized tasks that allows automatethe procedure for measuring the level of knowledge and skills of the student.	Fund of test tasks
2	Control work (KR)	A practical case-task, the performance of which is normalized and evaluated according to the degree of completion.	Task for control work
3	Report, message (DS)	Product independent work student, which is a public performance on the presentation of the results of the solution of a certain educational and practical, educational and research or scientific Topics	Topics of reports, messages
four	Control questions for the test	The final form of knowledge assessment. In higher education institutions are held during examination sessions.	Questions for standings

**Control questions for the test in the discipline
"Management of innovative business processes"
formation of competence PC-6**

1. The concept and economic essence of innovation.
2. Classification of innovations.
3. Innovation (innovation) as an object of management.
4. Concepts of innovative development.
5. Influence of the technological order on the strategic choice of the development of the organization.
6. Goals, objectives, forms and methods of formation and implementation of the state innovation policy.
7. The concept of innovation infrastructure.
8. Goals and objectives of forecasting scientific and technological development.
9. Features of product, technological and modifying innovations
10. Intra- and inter-firm organizational forms of innovation activity
11. The essence and structure of the innovation process.

12. The main stages of the product life cycle and their characteristics.
13. Basic provisions of the concept of national innovation systems.
14. Commercialization of the results of scientific and technical activities: essence and features at different stages of the life cycle.
15. The main factors determining the competitiveness of products and technologies.
16. Innovative potential of an enterprise (organization) as the most important factor of competitiveness.
17. Strategies for innovative development of enterprises and approaches to their formation and implementation.
18. Methods and approaches to overcome resistance to innovation and conflict resolution.
19. Designing business processes for innovation.
20. Team building and leadership in the implementation of innovative projects and programs for innovative development of enterprises.
21. The concept of the project. Development of an innovative project and ensuring its implementation.
22. Features of the regulation of innovation processes at the macro- and micro-levels of management.
23. The concept and definition of an innovation program as an object of management.
24. State and international programs to support innovation.
25. Schemes of the organizational structure of project management.
26. Marketing of an innovative project.
27. Scientific and technical expertise of innovative projects: directions, forms, methods, tools.
28. Uncertainty and risks in innovative activity.
29. Tools for financial analysis and resource management of an innovative project.

Test questions by discipline

"Management of innovative business processes" (formation of competencies PC-6)

1. Innovative activity in the field of applied R&D of a technological profile is aimed at ... creating an intellectual product
creation and development of innovations - processes
 generalization of the potential of scientific knowledge
2. The basis of material production
scientific knowledge
 material and technical base human capital

3. After exploratory research, it is (are) carried out ...
applied research and development
design and technical workdevelopment of design documentation

4. At the fourth stage, ... the creation of samples of new products and experiments, the formation of funding sources
the process of commercialization of an innovation from launching into production and entering the market and further through the main phases of the product life cycle

5. The path of movement of knowledge to new results is ... the choice of alternatives analysis of factors
hypotheses
implementation of the experiment

6. The third stage of the innovation process
OKR and RCC
conducting exploratory R&D carrying out applied R&D

7. The second stage of the innovation process
conducting applied research
conducting exploratory R&D and R&D

8. Components of a holistic system of innovation investment management
innovation
technology
economy
education
the science
New Product

9. The main element of a holistic system of innovation is investments in science and science.
human

10. Exploratory R&D ends ... with the release of new products, hypotheses
experimental testing of new methods

11. Technological leadership in the production of science-intensive products means ... an indicator of the high potential of scientific knowledge; an increase in the competitiveness of a product
improving the state of the country's economy
- 12.2 The purpose of applied research is to search for and put forward scientific and technical ideas about the materialization of existing knowledge and discoveries, to create a new product and master new technologies
determination of the quantitative characteristics of the method of satisfying a particular need of the economy and social production
13. The first stage of the innovation process is carrying out applied R&D
conducting exploratory research
OKR and RCC
14. The innovation process is ... putting forward hypotheses in areas of research and testing them against facts
creation, distribution of products and technologies with scientific and technical novelty and satisfying new social needs
selection and analysis of facts for the formulation and solution of a scientific problem to create an innovation
15. The knowledge potential of innovation activities includes ... R & D and ST
R&D and DIC
FTI and R&D
16. An intellectual product is ... a set of scientific, theoretical knowledge
the potential of scientific knowledge based on the results of the Physicotechnical Institute and exploratory R&D, which has no market value
the result of human intellectual activity
17. The most important result of exploratory research is finding a fruitful idea and its theoretical justification
scientific substantiation of methods for using theoretical knowledge and discoveries in practice
scientific substantiation of investments in the innovation sphere

18. Actual costs are higher and lead times are... longer.

OKR

NIROPC

19. Preliminary projects and preliminary design are developed at the stage ...

OKR and RCC

exploratory R&D applied R&D

Criteria for evaluation:

Excellent - from 90% to 100% correct answers;

Good - from 75% to 90% correct answers;

Satisfactory - from 55% to 75% of correct answers;

Unsatisfactory - less than 55% of correct answers.

Test
(formation of PC-6 competencies)

"Sales forecast for an innovative enterprise"

Methodical instructions:

1. Define your option (I or II) and select data from the table.
2. Plot a scatterplot.
3. Using the method of least squares (OLS) and the equation of a straight line ($y=ax+b$), determine the trend.
4. Find the sales forecast for next year.
5. Calculate a special seasonal index for your forecast month.
6. Adjust the sales forecast value for a special seasonal index (only for your forecast month).
7. Calculate the forecast error.

Exercise:

Month, x	I option	II option
	Sales volume, y	Sales volume, y
one	34	thirty
2	39	45
3	37	40
four	42	58

5	47	55
6	59	65
7	55	70
eight	59	75
9	52	80
ten	47	75
eleven	42	70
12	37	fifty

Note: the first digit is the number of the option, the second digit is the number of the forecast month.

Evaluation criteria: "excellent" - correctly made forecast without errors, "good" - correctly made forecast (errors in calculations, but not more than 1-2), "satisfactory" - correctly made forecast (errors in calculations, but not more than 4) , "unsatisfactory" - not correctly made forecast, errors leading to an incorrect result.

**List of topics of reports
in the discipline "Management of innovative business processes" (formation of
competencies PC-6)**

1. Concepts: process, business process, technological process, information flow, object flow, work flow
2. Concepts: Management of business processes of high-tech companies, processor management, business process management system.
3. Concepts: General systems theory, systems approach, systems analysis, structural analysis, systems, structure, properties of systems
4. The concepts of a system or process map, main, auxiliary processes, management processes, supporting processes
5. Methods for classifying processes
6. Methods for describing the processes IDEFx, EPS, BPMN
7. Comparative analysis of methods for describing processes, where and in what situations certain methods are used
8. Stages of business process description, home of ARIS
9. Software tools for describing processes, comparing their capabilities, advantages and disadvantages
10. Documentation of business processes, the structure of the regulations, types of documents in the enterprise
11. Administrative business processes, examples, essence
12. Ways to analyze business processes, types of indicators

13. Optimization of business processes, examples, options
14. The essence of business process automation systems
15. Ways to evaluate the effectiveness of business processes
16. Algorithm for the implementation of process management in the enterprise, the Deming cycle in process management.

Report Evaluation Criteria

No.	Criterion	Grade			
		ex.	choir.	satisfactory	unsatisfactory
1	Report Structure	The report contains semantic parts, balanced in volume	The report contains three semantic parts, unbalanced in volume	One of the semantic parts of the report is missing	The report does not trace the presence of semantic parts
2	Content of the report	The content reflects the essence of the problem under consideration and the main results obtained.	The content does not fully reflect the essence of the problem under consideration or the main results obtained.	The content does not fully reflect the essence of the problem under consideration and the main results obtained.	The content does not reflect the essence of the problem under consideration or the main results obtained.
3	Ownership of the material	The student fully owns the material presented, is oriented in the problem, freely answers questions	The student owns the material presented, is oriented in the problem, finds it difficult to answer some questions	The student is not fluent enough in the material presented, poorly oriented in the problem	The student does not own the material presented, poorly oriented in the problem
4	Relevance to the topic	The presented material is fully consistent with the stated topic.	The material presented contains elements that are not relevant to the topic.	The material presented contains a large number of elements that are not related to the topic.	The material presented is slightly relevant to the topic.