



ORGANIZATION OF SCIENTIFIC AND INNOVATIVE ACTIVITIES

Working program of the academic discipline (Syllabus)

Details of the academic discipline

Level of higher education	<i>Third (educational and scientific)</i>
Branch of knowledge	<i>13 Mechanical engineering¹</i>
Specialty	<i>133 Industrial engineering</i>
Educational program	<i>Industrial engineering</i>
Discipline status	<i>Normative</i>
Form of education	<i>daytime</i>
Year of training, semester	<i>1st year, spring semester</i>
Scope of the discipline	<i>4 (120)</i>
Semester control/ control measures	<i>Test</i>
Lessons schedule	<i>3 hours per week (2 hours of lectures and 1 hour of practical classes)</i>
Language of teaching	<i>Ukrainian</i>
Information about head of the course / teachers	Lecturer: Ph.D., Professor Viktor Mykolayovych Marchevskyi, vmarchevsky@gmail.com Practical Ph.D., Professor Viktor Mykolayovych Marchevskyi, vmarchevsky@gmail.com
Profile of the teacher	vmarchevsky@gmail.com
Placement of the course	https://ci.kpi.ua/uk/syllabuses-bac-disciplines/#place

Program of educational discipline

1. Description of the educational discipline, its purpose, subject of study and learning outcomes

Science as a system of knowledge that reveals the patterns of development of nature and society and ways of influencing the surrounding world was born in the ancient world in connection with the needs of social practice. In its current form, science began to take shape in the 16th and

¹In fields Field of knowledge/Specialty/Educational program:

For the disciplines of professional and practical training, information is noted in accordance with the curriculum.

For social and humanitarian disciplines, a list of branches, specialties, or "for all" is indicated.

17th centuries, and to this day has already turned into a productive force that determines the level, prospects and effective ways of social and economic development of each individual enterprise, state and humanity as a whole.

At the same time, the social well-being of citizens and the economic development of the state are determined not only and not so much by the mastery of scientific knowledge, the ability to see and successfully solve fundamental scientific problems, but by the ability to extract economic benefits from the achievements of science. Innovative activity, as a result of which scientific and technical achievements are transformed into new competitive products and new, more efficient technologies, has become the most important factor of the economic security of the state and its social and economic development.

In the modern conditions of powerful globalization changes, education, science, and innovation are the determining factors designed to ensure the innovative development of society and the state, to create conditions for rapid market growth based on the renewal of technologies and products, and to eliminate the significant lag behind the Ukrainian economy and the state from countries with developed innovative systems

The subject of the academic discipline "Organization of scientific and innovative activity" is the study of theoretical concepts of innovation processes and scientific innovation activity.

The purpose of the educational discipline "Organization of scientific and innovative activities»

The purpose of studying this discipline is to form graduate students' complex of knowledge about the structuring and organization of the scientific innovation process, its information and investment support; about the stages of preparation and implementation of innovation processes and methods of determining their effectiveness, finding partners for joint implementation of scientific innovation projects, forms and sources of financing projects, management of innovations. In accordance with the goal, the training of doctors of philosophy in this specialty requires the strengthening of competencies developed in graduate students:

- the ability to conduct critical analysis, evaluation and synthesis of new and complex ideas;
- ability to develop and implement projects, including own research;
- the ability to initiate research and innovation projects and work autonomously during their implementation;
- the ability to plan and organize the work of research teams to solve scientific and scientific-educational tasks;
- the ability to propose concepts, models, invent and test methods and tools of professional activity using the base of natural, social, humanitarian and economic sciences;
- the ability to carry out professional and personal self-education, designing a further educational route and professional career, participation in research and experimental work;

- the ability to convey the results of one's own research to colleagues, including at the international level, communicate in a dialogic mode with the wider scientific community, conduct a scientific discussion, conduct joint research and prepare joint publications;
- the ability to present the results of scientific research in requests for funding, scientific projects, requests for grants;
- the ability to independently carry out scientific and research activities in the ecological field using modern theories, methods and information and communication technologies;
- the ability to use adequate methods of effective interaction with representatives of various groups (social, cultural and professional);
- the ability to adapt and generalize the results of modern research in the ecological field to solve scientific and practical problems;
- the ability to clearly and unambiguously convey one's own conclusions, as well as the knowledge and explanations that substantiate them, to specialists and non-specialists, in particular to people who are studying;
- the ability to summarize the results of scientific and technical activities, to prepare scientific and technical publications based on the results of completed research;
- the ability to carry out an examination of existing industrial productions and other economic facilities to determine the level of efficiency in the use of raw materials and other natural resources;
- the ability to identify partners for joint scientific activities at the international level, to coordinate work with scientific partners in the implementation of scientific projects.

1.2. According to the requirements of the educational discipline program "**Organization of scientific and innovative activities**", post-graduate students after learning it must demonstrate the following program learning outcomes:

- to possess modern methods and technologies of scientific communication in Ukrainian and foreign languages with representatives of social, cultural, and professional groups;
- to know the priority state directions for the development of science, engineering and technology in specialized and related areas;
- Demonstrate awareness of modern environmental protection strategies, environmental legislation, regulatory documents on environmental protection;
- work autonomously or in a team during the formation and implementation of a research and innovation scientific project;
- prepare scientific results for publication, present them at scientific and scientific-technological forums, conferences, seminars in Ukrainian and foreign languages;
- establish contacts and organize scientific work with potential partners in areas of scientific research for mutually beneficial cooperation.

2. Pre-requisites and post-requisites of the discipline (place in the structural and logical scheme of training according to the relevant educational program)

Studying the discipline "**Organization of scientific and innovative activities**" is based on the principles of integration of various knowledge acquired by graduate students during their Master's studies in "Management of Projects and Grants", "Marketing of startup projects", as well as when studying the disciplines "Foreign language for scientific activity", "Philosophical

foundations of scientific activity", "Methodology of scientific research". The discipline "Organization of scientific and innovative activities" ensures the study of the disciplines "Systems and methods of decision-making in ecology", the implementation and preparation of a dissertation for defense.

3. Content of the academic discipline

Chapter 1. Essential characteristics of innovations and innovation processes

Topic 1. The essence of the main concepts of innovative activity

Topic 2. Formation and essence of innovative theories

Topic 3. Characteristics of the innovation process

Topic 4. Types of innovative structures and their characteristics

Topic 5. Innovative scientific and technical structures

Topic 6. Management of innovations in the field of knowledge-intensive technologies

Section 2. Scientific and technical, technological innovations and changes

Topic 7. Basics of classification of innovations

Topic 8. The concept of an innovative project and its management

Topic 9. Risk assessment of innovative activity

Chapter 3. State management of innovations and changes

Topic 10. The role of the state in creating a mechanism for regulating innovative activity

Chapter 4. The essence and peculiarities of patent and license trade

Topic 11. Patents and licenses

Topic 12. Patent and licensing activity in Ukraine

Chapter 5. Information provision of innovative processes

Topic 13. Information resources in innovative activity

Chapter 6. Expertise and economic efficiency of innovative projects

Topic 14. Examination of innovative projects

Topic 15. Economic efficiency of innovations

Chapter 7. Scientific partnership and financing of innovative scientific activity

Topic 16. Scientific partnership

Topic 17. Financing and crediting of innovative activities

Topic 18. Concept of grant

4. Educational materials and resources

Basic literature

1. *Mykytyuk P. P., Innovative activity: Education. pos./ P. P. Mykytyuk, B. G. Seniv - K.: Center for Educational Literature, 2009. - 392 p.*

2. *Innovative management: education. manual / L.I. Mykhailova, O.I. Gutorov, S.G. Turchyna, I.O. Sharko. - View. 2nd, add. - Kyiv: Center for Educational Literature, 2015. - 234 p.*

Additional literature

3. *Shevchenko L. S. Strategic innovation management: teaching. manual Kharkiv: National law Yaroslav the Wise University, 2019. 155 p.*
4. *Innovative development of the enterprise: training. manual/Pugach A.M., Demchuk N.I., Dovgal O.V., Kryuchko L.S., Tyaglo N.V.– FOP Shvets V.M., 2018. – 348 p.*
5. *Dudar T. G., Melnychenko V. V. Innovative management: teaching. manual – Ternopil: Economic Thought, 2008. – 250 p.*
6. *Bondar O.V., Hlebova A.O. Innovative management - education. manual - 2012.*
7. *Bennett LM, Gadlin H., Levine-Finley S.. Collaboration and Team Science: A Field Guide. National Institutes of Health. 2010. 68 years*

Information resources on the Internet

9. *Ministry of Environmental Protection and Natural Resources of Ukraine - <https://mepr.gov.ua/>*
10. *Industrial ecology. Community of environmental specialists -<http://www.eco.com.ua/>*
11. *Professional Association of Environmentalists of Ukraine(PAEU) - <https://paeu.com.ua/>*

5. Methods of mastering an educational discipline (educational component)

Lecture classes

Lectures are aimed at:

- provision of modern, integral, interdependent knowledge in the discipline "Organization of scientific and innovative activities", the level of which is determined by the target attitude to each specific topic;
- ensuring creative work of post-graduate students together with the teacher during the lecture;
- education of postgraduate students' professional and business qualities and development of their independent creative thinking;
- forming the necessary interest in graduate students and providing direction for independent work;
- teaching materials in clear and high-quality language with observance of structural and logical connections, clarification of all newly introduced terms and concepts;
- accessibility for perception by this audience.

No. z/p	The name of the topic of the lecture and a list of the main questions (a list of didactic tools, references to the literature and tasks on the SRS)	Hour
1	<p>The essence of the main concepts of innovative activity Classification of innovations. The main stages and stages of the innovation process. General characteristics of innovation process models.</p> <p>Literature: [1] c. 7-47; [2] c. 12-20.</p> <p>Tasks on SRS. Innovation diffusion models.</p>	2
2	<p>Formation and essence of innovative theories Modern concepts of innovative development. Formation and trends of the new economy. Development of knowledge-intensive high-tech industries and markets.</p> <p>Literature: [2] c. 21-33; [5] c. 36-65.</p> <p>Tasks on SRS. Innovation market.</p>	2
3	<p>Characteristics of the innovation process The essence and purpose of the innovation process. Phase diagram of the innovation process. Peculiarities of organizations in the innovation process.</p> <p>Literature: [2] c. 34-39.</p> <p>Tasks on SRS. Life cycle of innovations.</p>	2
4	<p>Types of innovative structures and their characteristics</p> <p>Peculiarities of building R&D organizational structures. Main types of R&D organizational structures. Basic methods of organizing the innovation process.</p>	2

	<p><i>Literature: [1] c. 118-134.</i></p> <p><i>Tasks on SRS. Reasons and sources of innovative ideas.</i></p>	
5	<p><i>Innovative scientific and technical structures</i></p> <p><i>Technopolis as an economic means of introducing innovations. Innovative essence of technopark structures and principles of their creation. Business incubators, their role and importance. The role of venture business in the development of innovative activity. Venture financing. Business planning of innovative activities.</i></p> <p><i>Literature: [2] c. 89-112.</i></p> <p><i>Tasks on SRS. Innovative management in Japanese and US companies.</i></p>	2

6	<p>Management of innovations in the field of knowledge-intensive technologies</p> <p>Technological forecasting. Forsyth. Stages of Foresight's development. Forsyth's principles. Forsyth's methods.</p> <p>Literature: [1] c. 323-336; [3] c. 47-56.</p> <p>Tasks on SRS. Scenario planning algorithm.</p>	2
7	<p>Basics of classification of innovations</p> <p>Concept of technology and its types. Management of production technologies. The effect of innovative technologies entering the foreign market. Characteristics of the world technology market.</p> <p>Literature: [2] c. 49-65.</p> <p>Tasks on SRS. Planning of innovative processes.</p>	2
8	<p>The concept of an innovative project and its management</p> <p>The essence of the innovative project and its content. Development of the concept of an innovative project. Planning of an innovative project. Organization of management with an innovative program. Organization of program control and regulation.</p> <p>Literature: [1] c. 163-187; [5] c. 126-155.</p> <p>Tasks on SRS. Motivation and stimulation of innovative activity.</p>	2
9	<p>Assessment of the risks of innovative activity</p> <p>Innovation and risk: problems and assessment methods. Comparative analysis of quantitative risk assessment methods. Risk assessment when choosing partners during the implementation of innovative projects.</p> <p>Literature: [1] c. 195-231.</p> <p>Tasks on SRS. Methods of uncertainty analysis.</p>	2
10	<p>The role of the state in creating a mechanism for regulating innovative activity</p> <p>State innovation policy. State control in the field of innovative activity. State regulation of international innovative activity.</p> <p>Literature: [1] c. 81-117; [2] c. 71-78.</p> <p>Tasks on SRS. The influence of tax measures on innovative activity.</p>	2

11	<p>Patents and licenses</p> <p><i>Concept and economic content of patents and licenses. The international patent system and the basic principles of building national patent systems. Restrictive practices in the field of technology transfer. Liability for infringement of patent rights.</i></p> <p><i>Literature: [2] c. 126-136.</i></p> <p><i>Tasks on SRS. Legal protection of technical solutions.</i></p>	2
12	<p>Patent and licensing activity in Ukraine</p> <p><i>Organizational structure of the patent system of Ukraine. The legal basis of the national patent system. Practical aspects of intellectual property protection.</i></p> <p><i>Literature: [2] c. 138-156.</i></p> <p><i>Tasks on SRS. Licensing and legal procedure for technology transfer.</i></p>	2
thirteen	<p>Information resources in innovative activity</p> <p><i>Management decisions. The concept of innovative information technology resources. Information products and services. Information provision of innovation policy. Management decision and characteristics of its adoption in innovative management.</i></p> <p><i>Literature: [1] c. 315-323; [2] c. 165-171.</i></p> <p><i>Tasks on SRS. Innovation monitoring.</i></p>	2
14	<p>Examination of innovative projects</p> <p><i>Tasks and main methods of examination of innovative projects. Methods of choosing the optimal innovative project. Indicators of profitability of innovative projects. Ways to reduce risk when implementing innovations.</i></p> <p><i>Literature: [2] c. 170-181.</i></p> <p><i>Tasks on SRS. Ecological innovation and investment project.</i></p>	2
15	<p>Economic efficiency of innovations</p> <p><i>Approaches and indicators for evaluating the economic efficiency of innovations. Economic efficiency of production and implementation of innovation. Effectiveness of purchasing innovations.</i></p> <p><i>Literature: [1] c. 280-313; [2] c. 182-189; [4] c. 227-250.</i></p> <p><i>Tasks on SRS. Types of effects of innovative activity.</i></p>	2

16	<p>Scientific partnership</p> <p><i>Ethical principles in scientific partnership. Analysis of scientific networks through co-authorship of publications. Partners and executors of the scientific project. Formation of a scientific project team. International scientific partnership and professional growth of a scientist.</i></p> <p><i>Literature: [7] c. 13-55.</i></p> <p><i>Tasks on SRS. Conflict management in a scientific project team.</i></p>	2
17	<p>Financing and crediting of innovative activities</p> <p><i>The essence, principles, purpose and tasks of the system of financing scientific, technical and innovative activities. Financing the creation and operation of technology parks and other innovative structures. Directions of financial and credit support of innovative activity.</i></p> <p><i>Literature: [1] c. 265-279; [4] c. 199-216.</i></p> <p><i>Tasks on SRS. Venture funds as a source of financing innovative activity.</i></p>	2
18	<p>The concept of a grant</p> <p><i>Grantology as a field of knowledge. Grantology as a field of practical activity. Development of ideas about grants in domestic legislation. Classification of grants. Grant programs.</i></p> <p><i>Literature: [8] c. 5-64.</i></p> <p><i>Tasks on SRS. Errors in the preparation of grant applications.</i></p>	2
	In total	36

Practical training

In the system of professional training of graduate students in this discipline, practical classes make up 33% of the classroom load. As a supplement to the lecture course, they lay and form the basis of the qualification of the Doctor of Philosophy in the field of ecology, namely innovative activity in scientific research. The content of these classes and the method of conducting them should ensure the development of the creative activity of the individual. They develop the ability to use special terminology, allow you to check knowledge, therefore this type of work is an important means of operational feedback. Practical classes should perform not only cognitive and educational functions, but also contribute to the growth of graduate students as creative workers in the field of environmental protection.

The main tasks of the cycle of practical classes:

- help graduate students systematize, consolidate and deepen knowledge of a theoretical nature in the field of scientific and innovative activities;
- to contribute to a deeper understanding of the forms of innovation, methods of their creation and ways of implementation;
- master practical methods of innovation management, organization, planning, financing and evaluation of innovative activities;
- to form skills to learn independently, that is, to master the methods, methods and techniques of self-learning, self-development and self-control.

No. z/p	Name of the subject of the practical session and list of main questions (a list of didactic support, references to the literature and tasks on the SRS)	Hour
1	<p>Innovative process and innovative activity</p> <p>The essence of the innovation process. The stage of the innovation process. The essence of scientific, scientific and technical, innovative activity. Sources and causes of innovative ideas. The priority importance of fundamental science in the development of innovations.</p> <p>Literature: [1] c. 7-47.</p>	2
2	<p>Organizational forms of innovation implementation</p> <p>Organizational structures for supporting innovative entrepreneurship (business incubator). Organizational forms of integration of science and production (regional science and technology center, technology park, technopolis)</p> <p>Literature: [4] c.156-196.</p>	2
3	<p>Innovation management system</p> <p>Concepts, tasks, subjects and objects of innovation management. Innovation management mechanism. Development of the concept of innovative strategy. Innovative potential.</p> <p>Literature: [4] c. 123-146.</p>	2
4	<p>Innovation project management</p> <p>Program-targeted innovation management. Organization of management of target programs. Project management. Formation of a calendar plan and development of network models. Critical path method. Resource planning and cost analysis of the innovation program. Program control and regulation.</p> <p>Literature: [1] c. 163-187.</p>	2

5	<i>Risk management in scientific and innovative activities</i> <i>The concept of uncertainty and risk. Risks of innovative activity and their classification. Peculiarities of taking into account the risk of innovative activity.</i> <i>Literature: [1] c. 195-231.</i>	2
6	<i>State regulation of innovative activity</i> <i>The essence and tasks of the state innovation policy. Methods and tools of state regulation of innovative activity.</i> <i>Literature: [4] c. 266-287.</i>	1
7	<i>The issue of intellectual property protection in scientific and innovative activities</i> <i>Structure of intellectual property. Criteria for the patentability of an invention. Problems of the national patent system of Ukraine.</i> <i>Literature: [2] c. 126-156.</i>	1
8	<i>Evaluation of the efficiency of innovative activity</i> <i>Principles of evaluation and performance indicators of innovative activity. Main indicators of economic efficiency of innovative projects.</i> <i>Literature: [5] c. 200-212.</i>	2
9	<i>Financing of innovative processes</i> <i>The financial mechanism of the scientific, technical and innovative sphere and its components. The main sources of financing, their classification features and characteristics. The impact of spending on science on its role in the socio-economic development of the country. Innovation financing.</i> <i>Literature: [1] c. 265-279.</i>	2
10	<i>Test</i>	2
	<i>In total</i>	18

6. Independent work of a student/graduate student

Independent work takes up 55% of the time of studying the credit module, including preparation for the credit. The main task of the independent work of graduate students is to acquire scientific knowledge in areas that are not included in the list of lecture questions by personally searching for information, forming an active interest in a creative approach to educational work. In the process of independent work within the framework of the educational component, the graduate student must master the tools and technologies of management of

scientific and innovative activities, which includes applied research, experimental developments, as well as activities that ensure the creation of innovations - scientific and technical services, marketing research, organizational and financial activities .

No. z/p	The name of the topic submitted for independent processing	Number of hours of SRS
Chapter 1. Essential characteristics of innovations and innovation processes		
1	<i>Innovative and creative development of civilization. Essential characteristics and classification of innovations. Strategic and breakthrough innovations and their impact on the economy. The Global Innovation Index. Innovation process and its components. Innovation process and its components. Innovation cycle. Models of open and closed innovations. Innovative management and innovation management: relationship of concepts. Conditions for the emergence of demand for innovations. Planning and organizing the creation of a new product. Types of demand for innovation and factors affecting it. Evaluation of supply and demand for innovations. The influence of factors on the formation and consumption of innovations. Problems of market formation of innovative products.</i>	20
Section 2. Scientific and technical, technological innovations and changes		
2	<i>Project management of the innovation process and the scheme of management of the innovation project. Comparative characteristics of parallel, sequential and parallel-sequential scheme of implementation of innovative projects. Criteria for evaluation and selection of innovative projects. Approaches to their calculation and analysis. The essence of forecasting the life cycle of an innovative project, its main methods and their comparative analysis. Analysis of risks associated with the delay of work at the stages of the innovation cycle.</i>	10
Chapter 3. State management of innovations and changes		
3	<i>Regulatory and legislative acts in innovative activity. State scientific, technical and industrial policy. Directions of industry innovative development. Types of scientific, project and innovative organizations, features of management in scientific organizations.</i>	4
Section 4. Essence and features of patent and license trade		
4	<i>Characteristics of methods of limiting competition used in the international technology market. "Patent pool" and characteristics of its features. Principles of building national patent systems.</i>	4
Chapter 5. Information provision of innovative processes		
5	<i>Basics of information policy in the EU. Scientific, technical and innovation policy in the EU. Functions of the European Library and the European Digital Library. Activities of European institutions in the scientific, technical and innovative</i>	4

	<i>spheres. European technological and informational initiatives to strengthen scientific, technical and innovative potential. EU legislation in the scientific and technical, innovation and information spheres.</i>	
Chapter 6. Expertise and economic efficiency of innovative projects		
6	<i>Innovation quality management. Quality management system. Indicators of R&D quality assessment. Management of the quality of innovative proposals. Standards in the field of innovation quality. Effectiveness of innovative activity. Assessment of scientific and technical, social and economic effects. General economic efficiency of innovations. Evaluating the effectiveness of licenses.</i>	8
Chapter 7. Scientific partnership and financing of innovative scientific activity		
7	<i>Transition from managing individual projects to managing programs and project portfolios. Management of relations with project stakeholders. Project knowledge management. Training and retraining of personnel in innovative activities, training of target teams to manage the implementation of specific business projects. System of coordination of regulation of the development of scientific, technical and innovative activities.</i>	10
6	<i>Preparation for the test</i>	6
	<i>Hours in general</i>	66

Policy and control

7. Policy of academic discipline (educational component)

Rules of attending classes and behavior in classes

Attending classes is a mandatory component of the assessment. Graduate students are obliged to take an active part in the educational process, not to be late for classes and not to miss them without a good reason, not to interfere with the teacher conducting classes, not to be distracted by activities unrelated to the educational process.

Rules for assigning incentive and penalty points

- incentive points can be awarded by the teacher exclusively for the performance of creative works in the discipline or additional completion of online specialized courses with the receipt of the appropriate certificate:*
 - <https://www.coursera.org/learn/innovacionnye-proekty>;*
 - https://courses.prometheus.org.ua/courses/course-v1:Prometheus+DTI101+2017_T3/about.*

But their sum cannot exceed 25% of the rating scale.

- Penalty points are not provided within the academic discipline.*

Policy of deadlines and rescheduling

In the event of arrears from the academic discipline or any force majeure circumstances, graduate students should contact the teacher through the available (provided by the teacher)

communication channels to resolve problematic issues and agree on the algorithm of actions for practice.

Policy of academic integrity

Plagiarism and other forms of dishonest work are unacceptable. Plagiarism refers to the absence of references when using printed and electronic materials, quotes, opinions of other authors. Inadmissible tips and write-offs during writing tests, conducting classes; taking a test for another graduate student; copying materials protected by the copyright system without the permission of the author of the work.

The policy and principles of academic integrity are defined in Chapter 3 of the Code of Honor of the National Technical University of Ukraine "Ihor Sikorsky Kyiv Polytechnic Institute". More details: <https://kpi.ua/code>

Policy of academic behavior and ethics

Graduate students must be tolerant, respect the opinions of others, formulate objections in the correct form, and constructively support feedback during classes.

Standards of ethical behavior of students and employees are defined in Chapter 2 of the Code of Honor of the National Technical University of Ukraine "Ihor Sikorskyi Kyiv Polytechnic Institute". More details: <https://kpi.ua/code>

8. Types of control and rating system for evaluating learning outcomes (RSO)

Distribution of study time by types of classes and tasks in the discipline according to the working study plan:

Semester	Training time		Distribution of study hours				Control measures		
	Credits	Acad. hours	Lectures	Practical	Lab. do	SRS	MKR	RR	Semester control
2	4	120	36	18	—	66	-	—	test

The student's rating in the discipline consists of the points he receives for:

The rating of the graduate student in the credit module consists of the points he receives for work in practical classes.

Semester control is credit.

System of rating (weighted) points and evaluation criteria

The system of rating points and evaluation criteria:

Performing tasks in practical classes.

The weighted score for 1 and 2 practical classes is 15 points each; in practical lessons 3 - 9 - 10 points each.

Criteria for evaluating the performance of a practical task

Completeness and signs of task completion	Points	
<i>The task is fully completed</i>	15	10
<i>Minor defects according to point 1</i>	13-14	8-9
<i>Untimely completion of the task</i>	10-12	7
<i>Untimely completion of the task, deficiencies under clause 1</i>	2-9	2-6
<i>Poor performance of the task</i>	1	1
<i>Failure to complete the task</i>	0	0

Thus, the rating semester scale from the credit module is:

$$R = 2 \cdot 15 + 7 \cdot 10 = 100 \text{ points}$$

According to the results of academic work in the first 7 weeks, the "ideal graduate student" should score 40 points. At the first certification (8th week), the graduate student receives "credited" if his current rating is at least 20 points.

According to the results of academic work for 13 weeks of study, the "ideal graduate student" should score 90 points. At the second certification (14th week), the graduate student receives "credited" if his current rating is at least 40 points.

The maximum number of points is 100. To receive credit from the credit module "automatically" you need to have a rating of at least 60 points.

A necessary condition for admission to credit is a rating of at least 40% of the rating scale (R), i.e. 40 points.

Graduate students who scored less than 0.6 R during the semester, as well as those who want to improve the overall rating, complete a credit test. At the same time, all the points they received during the semester are cancelled. Test tasks contain questions that refer to different sections of the credit module. The list of assessment questions is given in Chapter 9.

To obtain a passing grade, the sum of all rating points R received during the semester is converted according to the table:

Scores	Rating
95...100	perfectly
85...94	very good

75...84	<i>fine</i>
65...74	<i>satisfactorily</i>
60...64	<i>enough</i>
<i>RD<60</i>	<i>unsatisfactorily</i>
<i>Admission conditions not met</i>	<i>not allowed</i>

9. Additional information on the discipline (educational component)

An approximate list of questions submitted for semester control

1. Give the classic classification of innovations according to J. Schumpeter and its meaning.
2. Describe innovative activity, its objects and directions.
3. Explain the relationship between innovation and economic growth at the micro, macro, and global levels.
4. Describe the structures of the innovation process.
5. Give models of the innovation process, their essence and development.
6. Give an essential description of the stages of the innovation process.
7. Explain the purpose and objectives of innovation management.
8. List the organizational structures of management of innovative activities.
9. Compare the organizational forms of integration of science and production.
10. Reveal the essence of strategic planning of innovative activities
11. Give types of innovative strategies and methods of choosing an innovative strategy.
12. Describe the current planning of innovative activities.
13. Compare the organizational forms of management of innovative activities.
14. Explain the essence of personnel management in an innovative organization.
15. Give an assessment of motivation and stimulation of innovative activity.
16. Explain the concept of an innovative project, its types, tasks and participants.
17. Reveal the essence of the life cycle of an innovation project.
18. Explain the essence of managing the implementation of an innovative project.
19. Explain the essence of risk management in innovative activities.
20. List the types of effects from innovative activity.
21. Describe the methods of evaluating the effectiveness of innovative activities of the organization.
22. Explain the concepts and types of state innovation policy.
23. Describe the directions of state innovation policy.
24. Compare the methods of state stimulation of innovative activity.
25. Describe the essence and components of the innovation process management system.
26. Give the features of strategic management of innovative activities.
27. Describe plans and programs of innovative activity, their resource support.
28. Explain the essence and components of operational management of innovative activities.
29. Describe scientific organizations and their classification.
30. Describe the innovative infrastructure and the specifics of its functioning.
31. Describe the market subjects of innovative activity.
32. Compare the types of integration formations of science and production.
33. Explain the importance of information support in innovative activities.
34. The main sources of innovative information.

35. Describe the general scheme of innovation monitoring.
36. Give the methods of assessing the state of information provision of innovative activity.
37. Describe the system of financing innovative activity at the state level.
38. Specify the main sources of funding for innovative projects.
39. Give a substantive and meaningful description of the innovative project.
40. Give methods of managing innovative projects.
41. Reveal the content of the procedure for substantiation and evaluation of the project's effectiveness.
42. Reveal the essence of project structuring and budgeting.
43. Reveal the essence of project risk management.
44. Describe the principles and criteria for evaluating the effectiveness of innovative activity.
45. Evaluate methodical approaches to assessing the social and environmental effectiveness of innovative activities.
46. Describe the indicators for evaluating the social effectiveness of innovative activity.
47. List the main indicators of the environmental efficiency of innovative projects.
48. Describe commercial forms of technology transfer and their advantages.
49. List the key factors and prerequisites for commercialization.
- 50. Describe the factors of successful commercialization of the results of innovative activity.**

The working program of the academic discipline (syllabus): Compiled by the professor of the MAHNV department, candidate. technical Sciences, Viktor Marchevskiy

Approved by the Department of the Academy of Medical Sciences (protocol No. 20 dated June 20, 2022)

Agreed by the Methodical Commission of the faculty (protocol No. 10 dated 24.06.2022)