Federal State Autonomous Educational Institution of Higher Education
PEOPLES' FRIENDSHIP UNIVERSITY OF RUSSIA
RUDN University

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

Approved at the meeting of the Academic Council of RUDN University Protocol No. УС-19 dated 25.10.2021

Opened by order of the Rector of RUDN University No. 104 dated 25.02.2022

PROFESSIONAL EDUCATION PROGRAMME OF HIGHER EDUCATION

27.04.05 Innovatics
field of studies / speciality code and title

Profile:

Innovation Management
higher education programme title

The Educational Programme is developed in compliance with:
Educational Standard of RUDN University, approved by Order of the Rector No. 151 dated 15.03.2022

Level of education:

master's
(bachelor's / specialist's / master's – to fill in the required)

Graduate's Qualification:

Master
(graduate's qualification in compliance with the order of the Ministry of Education and Science of Russian Federation dated September 12, 2013, No. 1061)

Length of Educational Programme:

2 years	–	–
(full-time education)	(part-time education)	(correspondence education)

AGREED by:

Head of Educational Programme **Nazarova Yu.A.**	Chairperson of Didactic Council **Razoumny Yu.N.**	Head of Academy of Engineering **Razoumny Yu.N.**
(signature)	(signature)	(signature)
(day, month, year)	(day, month, year)	(day, month, year)

1. Aim (mission) EP HE

The program is focused on training highly qualified specialists in the field of creating and managing innovations at various stages of the life cycle. In the process of training, students receive theoretical training and practical skills that allow them to work effectively after completing the study of the educational program, dealing with innovation management in the design, research, production and operation of systems and controls in the industrial and defense industries, in the economy, in transport, in agriculture, medicine, etc

The program is designed in such a way that it allows students to form the most popular universal, general professional and professional competencies today, the development of skills for their implementation in professional activities in accordance with the requirements of the Educational Standards of Higher Education. In the process of training, students receive fundamental theoretical and applied knowledge that allows them to carry out activities in the field of creating and managing innovations at various stages of the life cycle

2. Relevance, specificity, uniqueness of the educational program

Innovation today is a key competitive advantage of organizations aimed at continuous development and sustainable growth. This is due to the accelerating pace of change that is taking place in the global economy. Qualified managers who are able to implement promising ideas in a timely and high-quality manner are in high demand. This, in turn, requires a special approach to the training of managers, based on the synthesis of sound theoretical positions and practical conclusions.

The program is aimed at training masters in the field of innovation management, it combines both the study of traditional academic disciplines and the creative activity of undergraduates in the framework of prestigious international competitions. The uniqueness of the program lies in the fact that it optimally combines technical, managerial and economic disciplines, as a result, graduates of the program will be prepared to develop innovative development programs at various levels, manage high-tech industries, solve managerial and economic problems at all stages of business management, and create an innovative business

3. Labor market needs for graduates

In recent years, the share of industrial organizations implementing innovations has

tripled and is more than 20% at the beginning of 2020. The innovative activity of industrial production organizations increased by 1.5 times (from 10% in 2016 to 15% at the beginning of 2020). In the field of information technology, software development and telecommunications, the trends are similar: the share of organizations engaged in technological innovation has doubled to about 15%. Statistics confirm the need of the labor market for specialists in the field of innovation management.

The program is distinguished by its focus on the economics of high-tech industries, and will make it possible to train professionals capable of creating innovations, economically justifying complex high-tech production projects, developing programs for the development of high-tech industry and calculating their effectiveness.

5. Admissions criteria

For admission to the program, entrance tests are passed in the form of an interdisciplinary exam.

6. Key features of the curriculum

6.1. The Educational Program of Higher Education (EP HE) is implemented with elements of e-learning / distance learning technologies (Microsoft Teams, Zoom, TUIS RUDN).

6.2. The language of implementation of the Educational Program of Higher Education is Russian.

6.3. EP HE is implemented by the Peoples' Friendship University of Russia.

6.4. Information on the planned bases for conducting training/industrial practices and (or) research

Potential partners: JSC Polyus Research Institute named after M.F. Stelmakh, JSC Shvabe, FSUE Research Institute Research and Production Association LUCH, UNIDO Center for International Industrial Cooperation in the Russian Federation, etc.

7. 1. The field of professional activity of masters includes:

7.1. Field(s) and/or sphere(s) of professional activity of a graduate who has mastered the EP of HE in which he (s) can carry out his/her professional activities:

40 Cross-cutting types of professional activity in the field of innovative production

management (in the areas of: management of innovative development of the enterprise; project management).

7.2. Type(s) of tasks of professional activity, for the solution of which the graduate is preparing as part of the development of the EP HE - organizational and managerial.

7.3. The list of generalized labor functions and labor functions related to the professional activity of a graduate of the EP HE, in accordance with which the program was developed/

Code and name of the professional standard	Generalized labor functions			Labor functions		
	Code	Name	Skill level	Code	Name	Skill level
40.033 Specialist in strategic and tactical planning and organization of production	B	Strategic management of the processes of planning and organization of production at the level of an industrial organization	7	B/01.7	Strategic management of production resource and capacity planning processes	7
			7	B/02.7	Strategic management of the processes of organizational and technological modernization of production	7
	C	Strategic management of projects and programs for the introduction of new methods and models of organization and planning of production at the level of an industrial organization	7	C/01.7	Organization of research and development of promising methods, models and mechanisms for the organization and planning of production	7
			7	C/02.7	Management of projects for reengineering business processes of an industrial organization using modern information technologies	7

8. Requirements to the learning outcomes

8.1. At the end of the development of the EP HE, the graduate must have the following universal competencies (UC):

Code and name of competence	Code and the indicators of achievement of competence

UC-1 Able to carry out a critical analysis of problem situations on the basis of a systematic approach, to develop an action strategy	UC-1.1. Analyzes the problem situation and decomposes it into separate tasks. UC-1.2. Suggests possible solutions to problems
UC-2 Able to manage the project at all stages of its life cycle	UC-2.1. Demonstrates knowledge of the characteristics of all stages of the project life cycle UC -2.2. Participates in project management at all stages of the life cycle
UC-3 Able to organize and lead the work of the team, developing a team strategy to achieve the goal	UC-3.1. Demonstrates knowledge of the principles of teamwork. UC-3.2. Supervises team members to solve assigned tasks
UC-4 Able to apply modern communication technologies, including in a foreign language(s), for academic and professional interaction	UC-4.1. Carries out academic and professional interaction, including in a foreign language. UK-4.2. Uses modern information and communication tools for academic and professional interaction
UC-5 Able to analyze and take into account the diversity of cultures in the process of intercultural interaction	UC-5.1. Demonstrates an understanding of different cultures UK-5.2. Builds social interaction, taking into account the common and different features of cultures and religions
UC-6 Able to determine and implement the priorities of their own activities and ways to improve them on the basis of self-esteem	UC-6.1. Assesses his resources and their limits (personal, situational, temporary), optimally uses them for the successful completion of the assigned task. UC-6.2. Determines the priorities of personal growth and ways to improve their own activities based on self-esteem
UC-7. Able: search for the necessary sources of information and data, perceive, analyze, memorize and transmit information using digital means, as well as using algorithms when working with data obtained from various sources in order to effectively use the information received to solve problems; evaluate information, its reliability, build logical conclusions based on incoming information and data.	UC-7.1 Effectively finds sources of necessary information. UC-7.2 Knows methods of analysis and evaluation of information

8.2. Upon completion of the development of the EP HE, the graduate must have the following general professional competencies: (GPC):

Code and name of competenceCode and name of competence	Code and the indicators of achievement of competence
GPC -1 Able to analyze and identify the natural science essence of control problems in technical systems on the basis of provisions, laws and	GPC-1.1. Analyzes management tasks in technical systems, highlighting the basic components, performs task decomposition

methods in the field of mathematics, natural and technical sciences	OPK -1.2. Competently, logically, reasonably forms their own judgments and assessments
GPC -2 Able to formulate management problems in technical systems and justify methods for solving them	GPC-2.1. Selects the best methods for solving control problems in technical systems GPC -2.2. Competently formulates management tasks in technical systems
GPC -3 Able to independently solve control problems in technical systems based on the latest achievements of science and technology	GPC-3.1. Independently finds sources of information for solving management problems in technical systems GPC-3.2. Demonstrates the basic principles of solving control problems in technical systems
GPC -4 Able to develop criteria for evaluating management systems in the field of innovation based on modern mathematical methods, to develop and implement management decisions to improve their efficiency	GPC-4.1. Formulates criteria for assessing the effectiveness of innovation management GPC-4.2. Demonstrates knowledge of mathematical methods necessary for making management decisions
GPC -5 Able to conduct patent research, determine the forms and methods of legal protection and protection of rights to the result of intellectual activity, dispose of the rights to them to solve problems in the field of development of science, technology and technology	GPC-5.1. Solves problems related to the use of intellectual activity to create innovative products and services GPC-5.2. Demonstrates knowledge of forms, methods of legal protection and protection of rights to the result of intellectual activity;
GPC -6 Able to collect and analyze scientific and technical information, summarize domestic and foreign experience in the field of innovation management and building innovation ecosystems	GPC-6.1. Independently finds reliable sources of scientific and technical information GPC-6.2. Demonstrates knowledge of methods of summarizing information in the field of innovation management
GPC -7 Able to reasonably select and justify structural, algorithmic, technological and software solutions for managing innovation processes and projects, implement them in practice in relation to the innovation systems of the enterprise, industry and regional innovation systems	GPC-7.1. Demonstrates knowledge of technological and software solutions for managing innovation processes GPC-7.2. Demonstrates knowledge of the features of industry and regional innovation systems
GPC -8 Able to perform experiments at existing facilities according to specified methods and process the results using modern information technologies and technical	OPK-8.1. Performs the experiment according to the specified methods OPK-8.2. Demonstrates knowledge of modern information technologies necessary to summarize the results of the experiment
GPC -9 Able to solve professional problems based on the history and philosophy of innovations, mathematical methods and models for innovation management, knowledge of the features of the emerging technological structures and the fourth industrial revolution in the innovation sphere	GPC-9.1. Demonstrates knowledge of the history and philosophy of innovations and uses them to solve problems GPC-9.2 Demonstrates knowledge of technological structures and uses them to solve problems
GPC -10 Able to develop, combine and adapt algorithms and software applications suitable for solving practical problems of digitalization in the field of professional activity	GPC-10.1 Develops algorithms and software applications necessary to solve the problem of digitalization

	GPC-10.2. Shows knowledge of key digitalization trends
GPC -11 Able to develop, combine and adapt algorithms and software applications suitable for solving practical problems of digitalization in the field of professional activity.	GPC-11.1. Develops algorithms and software applications for solving practical problems GPC-11.2. Shows knowledge of methods of combining algorithms

8.3. At the end of the development of the EP HE, the graduate must have the following professional competencies: (PC):

Code and name of competence	Code and the indicators of achievement of competence	Code and name of the PC
PC-1 The ability to organize the work of the creative team to achieve the scientific goal, to find and make management decisions, to evaluate the quality and effectiveness of labor, costs and results of the research and production team	PC-1.1 Demonstrates knowledge of the key principles of managing a creative team PC-1.2. Uses tools for assessing the quality and effectiveness of work	40.033 Specialist in strategic and tactical planning and organization of production
PC-2 The ability to find (choose) the best solutions when creating new high-tech products, taking into account the requirements of quality, cost, deadlines, competitiveness and environmental safety	PC-2.1. Demonstrates knowledge of assessing the quality, cost and competitiveness of an innovative product or service PC-2.2. Uses methods for assessing environmental safety	
PC-3 Ability to develop a plan and program for the organization of innovative activities of the research and production unit, to carry out a feasibility study of innovative projects and programs	PC-3.1. Uses methods of technical and economic design of innovative industries PC-3.2 Develops a plan and program for the organization of innovative activities	

9. Matrix of competencies formed by students in the development of EP HE "Innovation Management", in the direction of training 27.04.05 Innovation

		Universal competencies						
	Name of disciplines (modules) in accordance with the curriculum	UC-1: Able to carry out a critical analysis of problem situations on the basis of a systematic approach, to develop an action strategy	UC-2: Able to manage the project at all stages of its life cycle	UC-3: Able to organizeand manage thework of the team, developing a team strategy to achieve the goals	UC-4: Able to apply modern communication technologies, including in a foreign language(s), for academic and professional interaction	UC-5: Способен анализировать и учитывать разнообразие культур в процессе межкультурного взаимодействия	UC-6 is able to determine and implement the priorities of its own activities and ways to improve it on the basis of self-assessment	UC-7. Able to: search for the necessary sources of information and data, perceive, analyze, memorize and transmit information using digital means, as well as with data obtained from various sources in
Block 1	Mandatory part							
	Basic component							
	Methodology of scientific research	UC-1.1 UC-1.2						
	Foreign language in the professional activity of the master				UC-4.1	UC-5.1 UC-5.2		UC-7.1 UC -7.2
	Design of automated control systems		UC-2.1 UC-2.2					
	Variable component							
	Big Data Processing							
	Information Technologies in Mathematics modeling	UC-1.2						
	Numerical methods for solving problems of mathematical	UC-1.2					UC-6.1 UC-6.2	
	Management of business operations of hi-tech industries							
	Programming Technologies for Innovative Industries							
	Innovative Personnel Management Technologies			UC-3.1 UC-3.2	UC-4.2			
	Digital technologies of innovative production				UC-4.2			
	Geoinformation Systems and Applications	UC-1.2						
	Strategic controlling at an innovative enterprise							

	Economics of high-tech industries							
	Marketing of innovative products							
	Supply chain management in an innovative enterprise							
	Run time controlling at an innovative enterprise							
	The part formed by the participants of educational relations							
	Environmental Management at Innovative Enterprises							
	Innovative technologies of environmental management in industries							
	Evaluation of the effectiveness of innovation and investment projects			UC-3.2				
	International scientific and technical cooperation			UC-3.2				
Block 2	Mandatory part							
	Variable component							
	Introductory training							
	Organizational and management practice							
	Organizational and management practice							
	Pre-diploma practice							

		General professional competencies					
	Name of disciplines (modules) in accordance with the curriculum	GPC-1: Able to analyze and identify the natural science essence of management problems in technical systems on the basis of provisions, laws and methods in the field of mathematics, natural andtechnical sciences	GPC -2: Able to formulate control problems in technical systems and justify methods for solving them	GPC -3: Able to independently solve control problems in technical systems based on the latest advances inmanagement andtechnology	GPC -4: Able to develop criteria for evaluating management systems in the field of innovation based on modern mathematical methods, to develop and implement management decisions to improve their effectiveness	GPC -5: Able to conduct patent research, determine the forms and methods of legal protection and protection of rights to the result of intellectual activity, dispose of rights to them to solve problems in the field of development ofmanagement and engineering and technology	GPC -6: Able to collect and analyze scientific and technical information, summarize domestic and foreign experience in the field of innovation management and building innovation ecosystems
Block 1	Mandatory part						
	Basic component						
	Methodology of scientific research	GPC-1.1 GPC-1.2	GPC-2.1 GPC-2.2	GPC-3.1		GPC-5.2	
	Foreign language in the professional activity of the master						
	Design of automated control systems				GPC-4.1 GPC-4.2		GPC-6.1 GPC-6.2
	Variable component						
	Big Data Processing				GPC-4.2		
	Information Technologies of Mathematics Simulation				GPC-4.2		
	Numerical methods for solving problems of mathematical modeling				GPC-4.2		
	Management of operational activities of high-tech industries				GPC-4.1		
	Innovative Personnel Management Technologies			GPC-3.1			GPC-6.1 GPC-6.2
	Digital technologies of innovative production						
	Geoinformation Systems and Applications						
	Strategic controlling at an innovative enterprise						
	Economics of high-tech industries			GPC-3.2			
	Marketing of innovative products		GPC-2.1 GPC-2.2				

	Supply chain management in an innovative enterprise		GPC-2.1 GPC-2.2				
	Run-time controlling at innovative enterprise		GPC-2.1 GPC-2.2				
	Formed by the participants of educational relations						
	Environmental Management at Innovative Enterprises						
	Innovative technologies of environmental management in industries						
	Evaluation of the effectiveness of innovation and investment projects						
	International scientific and technical cooperation						
Block 2	Mandatory part						
	Variable component						
	Introductory training					GPC-5.1	GPC-6.1
	Organizational and management practice		GPC-2.1 GPC-2.2		GPC-4.1 GPC-4.2		
	Organizational and management practice						
	Pre-diploma practice						

		General professional competencies				
	Name of disciplines (modules) in accordance with the curriculum	GPC-7: Able to reasonably select and justify construction, algorithmic, technological and software solutions for managing innovation processes and projects, implement them in practice in relation to the innovation systems of the enterprise, industry and regional innovation systems	GPC-8: Able to perform experiments at existing facilities according to specified methods and process the results using modern information technologies and technical means	GPC-9: Able to solve professional problems based on the history and philosophy of innovations, mathematical methods and models for innovation management, knowledge of the features of emerging technological disciplinesand the fourth industrial revolution in the innovation field	GPC-10: Able to develop, combine and adapt algorithms and software applications suitable for solving practical problems of digitalization in the field of professional activity	GPC-11: Able to develop teaching materials and participate in the implementation of educational programs in the field of education
Block 1	Mandatory part					
	Basic component					
	Methodology of scientific research					
	Foreign language in the professional activity of the master					GPC-11.1 GPC-11.2
	Design of automated control systems	GPC-7.1 GPC-7.2	GPC-8.1 GPC-8.2			
	Variable component					
	Big Data Processing		GPC-8.2			
	Information Technology in Mathematical Modelling					
	Numerical methods for solving problems of mathematical modeling					
	Management of business operations of hi-tech industries	GPC-7.1				
	Innovative Personnel Management Technologies					
	Digital technologies of innovative production	GPC-7.1				GPC-11.1 GPC-11.2
	Geoinformation Systems and Applications	GPC-7.1 GPC-7.2				
	Strategic controlling at an innovative enterprise			GPC-9.1 GPC-9.2		
	Economics of high-tech industries					
	Marketing of innovative products					

	Supply chain management in an innovative enterprise					
	Run-time controlling at innovative enterprise					
	Formed by the participants of educational relations					
	Environmental Management at Innovative Enterprises					
	Innovative technologies of environmental management in industries					
	Evaluation of the effectiveness of innovation and investment projects					
	International scientific and technical cooperation					
Block 2	Mandatory part					
	Variable component					
	Introductory training					
	Organization and management practice					
	Organization and management practice	GPC-7.1				
	Pre-diploma practice					

		Professional competencies		
	Name of disciplines (modules) in accordance with the curriculum	PC-1: Ability to organize the work of the creative team to achieve the scientific goal, to find and make management decisions, to evaluate the quality and effectiveness of labor, costs and results of the research and production team	PC-2: Ability to find (choose) the best solutions when creating a new high-tech product atUC, taking into account the requirements of quality, cost, deadlines, competitiveness and environmental safety	PC-3: Ability to develop a plan and program for the organization of innovative activities of the research and production unit, to carry out a feasibility study of innovative projects and programs
Block 1	Mandatory part			
	Basic component			
	Methodology of scientific research			
	Foreign language in the professional activity of the master			
	Design of automated control systems			
	Variable component			
	Big Data Processing			PC-3.2
	Information Technologies in Mathematics Modeling			
	Numerical methods for solving problems of mathematical modeling			
	Management of business operations of hi-tech industries		PC-2.1	PC-3.2
	Innovative Personnel Management Technologies	PC-1.1 PC-1.2		
	Digital technologies of innovative production			PC-3.2
	Geoinformation Systems and Applications		PC-2.2	
	Strategic controlling at an innovative enterprise		PC-2.1	PC-3.2
	Economics of high-tech industries		PC-2.1	
	Marketing of innovative products		PC-2.1	
	Supply chain management in an innovative enterprise		PC-2.1	
	Run-time controlling at innovative enterprise			PC-3.1
	Formed by the participants of educational relations			

	Environmental Management at Innovative Enterprises		PC-2.2	
	Innovative technologies of environmental management in industries		PC-2.2	
	Evaluation of the effectiveness of innovation and investment projects		PC-2.1	
	International scientific and technical cooperation		PC-2.1	
Block 2	Mandatory part			
	Introductory practice	PC-1.1 PC-1.2	PC-2.1 PC-2.2	PC-3.1 PC-3.2
	Organizational and management practice	PC-1.1 PC-1.2	PC-2.1 PC-2.2	PC-3.1 PC-3.2
	Organizational and management practice	PC-1.1 PC-1.2	PC-2.1 PC-2.2	PC-3.1 PC-3.2
	Pre-diploma practice	PC-1.1 PC-1.2	PC-2.1 PC-2.2	PC-3.1 PC-3.2