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

Academy of Engineering

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

Approved at the meeting of the Academic
Council of RUDN University
Protocol No. 23

Opened by order of the Rector of
RUDN University No. 29

December 26, 2022

(date, month, year)

January 30, 2023

(date, month, year)

PROFESSIONAL EDUCATION PROGRAMME OF HIGHER EDUCATION

Field of Studies/ Speciality:

44.04.02 Psychological and Pedagogical Education

field of studies / speciality code and title

Profile/Specialisation:

Pedagogy in Engineering

higher education programme title

The Educational Programme is developed in compliance with:

Educational Standard of RUDN University, approved by Order of the Rector No. 371

dated 21.05.2021

(day, month, year)

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

E.A. Kovaleva

(signature)

(day, month, year)

Chairperson
of Didactic Council

N.L. Sokolova

(signature)

(day, month, year)

Head
of Educational
Department
Yu.N. Razoumny

(signature)

(day, month, year)

1. GOAL (MISSION) OF EP HE

The program is focused on training highly qualified specialists in the field of pedagogy in engineering. 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, engaging in pedagogical and methodological activities in technical universities.

The program is designed in such a way that it allows students to form the most popular universal, general professional and professional competencies today, to develop skills for their implementation in professional activities in accordance with the requirements of the Federal State Educational Standard 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 pedagogy in engineering.

2. RELEVANCE, SPECIFICITY, UNIQUENESS OF THE EDUCATIONAL PROGRAM

Today, the demand for highly qualified engineering personnel is extremely high, which is explained by the acceleration of the pace of change that is taking place in the global economy. Thus, the relevance of training effective teachers of engineering disciplines is obvious.

The program is aimed at training masters in the field of engineering pedagogy, 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 pedagogical and engineering subjects, as a result, the graduates of the program will be prepared for the organization of pedagogical activities, the creation and implementation of engineering educational programs, and the use of innovative technologies in educational activities.

3. PERSONNEL TRAINING IN EDUCATIONAL PROGRAMME PROFILE

Labor market experts predict that engineering specialties related to production will take the lead in the coming years. To date, there is an acute shortage of technical specialists with higher education in the field of communications and telecom, construction, mechanical engineering, electronics and electrical engineering, food and other industries. Industries are already experiencing an acute shortage of design engineers and process engineers. This situation entails an increasing demand for teachers of engineering specialties.

This program is distinguished by its focus on teaching engineering disciplines in technical universities, and will allow to train professionals who are able to effectively organize, implement and control the educational process.

4. SPECIAL REQUIREMENTS FOR POTENTIAL APPLICANTS

Admission to the program is subject to the Admission Rules approved by the relevant local regulatory act and publicly available on the official website RUDN <http://www.rudn.ru/admissions>.

5. FEATURES OF EDUCATIONAL PROGRAMME IMPLEMENTATION

5.1. EP HE is implemented with elements of e-learning / distance learning technologies (Microsoft Teams, Zoom, TUIS RUDN).

5.2. The language of implementation of the EP HE is English.

5.3. The program can be adapted to teach people with disabilities and persons with disabilities.

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

5.5. Information on the planned bases for conducting educational/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.

6. CHARACTERISTICS OF EDUCATIONAL PROGRAMME GRADUATE'S PROFESSIONAL ACTIVITIES

6.1. 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:

01 Education and science (in the areas of: implementation of basic professional educational programs and additional educational programs; scientific research).

6.2. 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 - pedagogical.

6.3. 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 title of the professional standard	Generalized labor functions			Labor functions		
	Code	Title	Qualification level	Code	Name	Qualification level
1.004 Teacher of vocational training, vocational education and additional professional education	I	Teaching in bachelor's, specialist's, master's and DPP programs focused on the appropriate level of qualification	7	I/01.7	Teaching courses, disciplines (modules) for bachelor's, specialist's, master's and (or) DPP programs	7

7. REQUIREMENTS FOR EDUCATIONAL PROGRAMME OUTCOMES

7.1 Upon completion of the Educational Programme, the graduate is expected to acquire the following generic competences (GCs):

Code and descriptor of generic competence	Code and competence level indicator
GC-1 Able to carry out a critical analysis of problem situations on the basis of a systematic approach, to develop an action strategy	GC-1.1. Analyzes the problem situation and decomposes it into separate tasks. GC-1.2. Forms possible solutions to problems
GC-2 Able to manage the project at all stages of its life cycle	GC-2.1. Demonstrates knowledge of the characteristics of all stages of the project life cycle GC -2.2. Participates in project management at all stages of the life cycle
GC-3 Able to organize and lead the work of the team, developing a team strategy to achieve the goal	GC-3.1. Demonstrates knowledge of the principles of teamwork. GC-3.2. Supervises team members to solve assigned tasks
GC-4 Able to apply modern communication technologies, including in a foreign language(s), for academic and professional interaction	GC-4.1. Carries out academic and professional interaction, including in a foreign language. GC-4.2. Uses modern information and communication tools for academic and professional interaction
GC-5 Able to analyze and take into account the diversity of cultures in the process of intercultural interaction	GC-5.1. Demonstrates an understanding of different cultures GC-5.2. Builds social interaction, taking into account the common and different features of cultures and religions
GC-6 Able to determine and implement the priorities of their own activities and ways to improve them on the basis of self-esteem	GC-6.1. Assesses their resources and their limits (personal, situational, temporary), optimally uses them for the successful completion of the assigned task. GC-6.2. Determines the priorities of personal growth and ways to improve their own activities based on self-esteem
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 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 Owns methods of analysis and evaluation of information

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

Code and descriptor of generic competence	Code and competence level indicator
GPC-1 Able to carry out and optimize professional activities in accordance with regulatory legal acts in the field of education and the norms of professional ethics	GPC-1.1. Knows the regulations in the field of education and the norms of professional ethics GPC-1.2. Competently uses legal acts in the field of education and the norms of professional ethics in their professional activities
GPC-2 Able to design basic and additional educational programs and develop scientific and methodological support for their implementation	GPC-2.1. Possesses the skills of designing basic and additional educational programs GPC-2.2. Possesses the skills of developing scientific and methodological support for basic and additional educational programs
GPC-3 Able to design the organization of joint and individual educational and educational activities of students, including those with special educational needs	GPC-3.1. Competently projects the organization of joint and individual educational and educational activities GPC-3.2. Possesses the skills of organizing joint and individual educational activities of students with special educational needs
GPC-4 Able to create and implement the conditions and principles of spiritual and moral education of students on the basis of basic national values	GPC-4.1. Demonstrates knowledge of the principles of creating and implementing conditions for spiritual and moral education based on basic national values GPC-4.2. Effectively creates and implements the conditions of spiritual and moral education on the basis of basic national values
GPC-5 Able to develop programs for monitoring the results of students' education, develop and implement programs for overcoming learning difficulties	GPC-5.1. Demonstrates the skills of monitoring the educational outcomes of students GPC-5.2. Effectively develops and implements programs for overcoming learning difficulties
GPC-6 Able to design and use effective psychological and pedagogical, including inclusive, technologies in professional activities necessary for the individualization of training, development, education of students with special educational needs	GPC-6.1. Competently owns the psychological and pedagogical technologies necessary for the individualization of learning, development, education of students with special educational needs GPC -6.2. Demonstrates the skills of owning inclusive technologies necessary for the individualization of learning, development, education of students with special educational needs
GPC-7 Able to plan and organize interactions between participants in educational relations	GPC -7.1. Demonstrates the skills of planning the interaction of participants in educational relations OPK-7.2. Effectively organizes the interaction of participants in educational relations
GPC-8 Able to design pedagogical activities on the basis of special scientific knowledge and research results	GPC-8.1. Effectively designs pedagogical activities on the basis of special scientific knowledge and research results OPK-8.2. Demonstrates possession of special scientific knowledge
GPC-9 Able to possess tools for working with large amounts of structured and unstructured information, use modern digital methods of processing, analysis, interpretation and visualization of data in order to solve problems professional and research psychological and pedagogical activities	GPC-9.1. Effectively uses modern digital methods of processing, analysis, interpretation and visualization of data in order to solve the tasks of professional and research psychological and pedagogical activities OPK-9.2 Demonstrates the skills of using tools for working with large amounts of structured and unstructured information

7.3. Upon completion of the Educational Programme, the graduate is expected to acquire the following professional competences (PCs):

Code and descriptor of professional competence	Code and competence level indicator	Code and title of occupational standard for relevant PC
PC-1 Able to design basic and additional educational programs and develop scientific and methodological support for their implementation	PC-1.1. Effectively uses the methods of designing basic and additional educational programs PC-1.2. Develops scientific and methodological support for the implementation of basic and additional educational programs	1.004 Teacher of vocational training, vocational education and additional professional education
PC-2 Able to design the organization of joint and individual educational and educational activities of students, including those with special educational needs	PC-2.1. Effectively uses the methods of designing, organizing joint and individual educational and educational activities PC-2.2. Works effectively with students with special educational needs	
PC-3 Able to develop programs for monitoring the results of students' education, develop and implement programs for overcoming learning difficulties	PC-3.1. Competently uses methods for developing programs for monitoring the results of students' education PC-3.2. Effectively uses methods for developing programs to overcome learning difficulties	
PC-4 Able to plan and organize interactions between participants in educational relations	PC-4.1. Effectively plans the interaction of participants in educational relations PC-4.2. Effectively organizes the interaction of participants in educational relations	
PC-5 Able to design pedagogical activities on the basis of special scientific knowledge and research results	PC-5.1. Effectively designs pedagogical activities on the basis of special scientific knowledge and research results PC-5.2. Competently uses the methods of designing pedagogical activity on the basis of special scientific knowledge and research results	

9. MATRIX OF COMPETENCES that students acquire when mastering the Educational Programme «Pedagogy in Engineering» in the field of studies 44.04.02 Psychological and Pedagogical Education

Code	Titles of subjects and internship, forming competences	GENERIC COMPETENCES						
		GC-1: Able to carry out a critical analysis of problem situations on the basis of a systematic approach, to develop an action strategy	GC-2 Able to manage the project at all stages of its life cycle	GC-3 Able to organize and lead the work of the team, developing a team strategy to achieve the goal	GC-4 Able to apply modern communication technologies, including in a foreign language(s), for academic and professional interaction	GC-5 Able to analyze and take into account the diversity of cultures in the process of intercultural interaction	GC-6 Able to determine and implement the priorities of their own activities and ways to improve them on the basis of self-esteem	GCUK-7. Able to: 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
B1	DISCIPLINES (MODULES)							
B1.O	Mandatory part							
B1.O.01	Core component	GC-1.1, GC-1.2	GC-2.1, GC-2.2	GC-3.1, GC-3.2	GC-4.1, GC-4.2	GC-5.1, GC-5.2	GC-6.1, GC-6.2	GC-7.1, GC-7.2
B1.O.01.01	Philosophy of Education and Science / Философия образования и науки	GC-1.1, GC-1.2	GC-2.1, GC-2.2	GC-3.1, GC-3.2				
B1.O.01.02	Professional Russian (as a Foreign Language) / Русский язык (как иностранный) в профессиональной деятельности				GC-4.1, GC-4.2	GC-5.1, GC-5.2		
B1.O.01.03	Cultural-historical and Activity Approach in Psychology and Education / Культурно-исторический и деятельностный подход в психологии и образовании		GC-2.1, GC-2.2					GC-7.1, GC-7.2
B1.O.01.04	Methodology of scientific research / Методология научного исследования						GC-6.1, GC-6.2	
B1.O.01.05	Design and Expertise of Educational Systems / Проектирование и экспертиза образовательных систем							
B1.O.02	Variable component							
B1.O.02.01	Innovative technologies in engineering education / Инновационные технологии в инженерном образовании							
B1.O.02.02	Digital education / Организация цифрового образования							

Code	Titles of subjects and internship, forming competences	PROFESSIONAL COMPETENCIES				
		PC-1 Able to design basic and additional educational programs and develop scientific and methodological support for their implementation	PC-2 Able to design the organization of joint and individual educational and educational activities of students, including those with special educational needs	PC-3 Able to develop programs for monitoring the results of students' education, develop and implement programs for overcoming learning difficulties	PC-4 Able to plan and organize interactions between participants in educational relations	PC-5 Able to design pedagogical activities on the basis of special scientific knowledge and research results
B1	DISCIPLINES (MODULES)					
B1.O	Mandatory part					
B1.O.01	Core component					
B1.O.01.01	Philosophy of EdGCation and Science / Философия образования и науки					
B1.O.01.02	Professional Russian (as a Foreign Language) / Русский язык (как иностранный) в профессиональной деятельности					
B1.O.01.03	Cultural-historical and Activity Approach in Psychology and EdGCation / Культурно-исторический и деятельностный подход в психологии и образовании					
B1.O.01.04	Methodology of scientific research / Методология научного исследования					
B1.O.01.05	Design and Expertise of EdGCational Systems / Проектирование и экспертиза образовательных систем					
B1.O.02	Variable component	PC-1.1, PC-1.2	PC-2.1, PC-2.2	PC-3.1, PC-3.2	PC-4.1, PC-4.2	PC-5.1, PC-5.2
B1.O.02.01	Innovative technologies in engineering education / Инновационные технологии в инженерном образовании	PC-1.1, PC-1.2				
B1.O.02.02	Digital education / Организация цифрового образования				PC-4.1, PC-4.2	
B1.O.02.03	Psychological - pedagogical technologies in education / Психолого-педагогические технологии в образовании		PC-2.1, PC-2.2			
B1.O.02.04	Management of educational process / Менеджмент образовательного процесса			PC-3.1, PC-3.2		

