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 Academic
Counsil of RUDN University
Protocol № 2022-08/24-11/1
29.11.2024
(date, month, year)

PROFESSIONAL EDUCATION PROGRAMME OF HIGHER EDUCATION

Field of Studies / Specialty:

1.6.9. Geophysics
(scientific speciality code and title)

Profile / Specialisation

Geophysics
(PhD program title)

The Educational Programme is developed in compliance with:
Educational Standard of RUDN University, approved by order of the Rector of RUDN University No. 139 dated March 9, 2022.

Length of Educational PhD Programme:

3 years
(full-time education)

Educational PhD Programme Features: programme is implemented in English

AGREED by:

Head of Educational Programme
V.Yu.Abramov
(signature)

Head of Faculty
Yu.N. Razoumny
(signature)

Head of Educational Policy Department
Vorobyeva A. A.
(signature)

Head of PhD Study Department
Borisova A. S.
(signature)

2025 г.

1. EDUCATIONAL PROGRAMME GOAL

The goal of the PhD program is to prepare and defend a dissertation for the degree of Candidate of Sciences in the scientific specialty 1.6.9. Geophysics.

2. BRIEF SUMMARY OF THE PROGRAMME

The program is focused on the training of highly qualified specialists in the direction of training 1.6.9. Geophysics. The curriculum is designed in such a way that it allows students to form professional competencies that are currently in demand. The purpose of the program is to create conditions for acquiring the necessary level of knowledge, skills, experience and experience for the implementation of professional activities and preparing for the defense of a scientific qualification work (dissertation) for the degree of candidate of sciences, as well as conducting scientific research in the interests of the development of science, mankind and humanitarian values. Research activities within the framework of the educational program cover the field of science and technology, which studies:

- Methods of processing and interpretation of the results of geophysical field measurements.
- Computer systems of processing, numerical inversion and complex interpretation of geological and geophysical data, including GIS-technologies.
- Use of geologic-geophysical data for the construction of digital geologic, hydrodynamic, geodynamic and other models of geologic environment and deposits.
- Geophysical monitoring of the geological structure and development of deposits by geophysical methods.
- Integrated analysis of multidimensional, multi-parameter and heterogeneous information including geophysical data
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- Measuring equipment, means, technologies, observation and collection systems geophysical data; geophysical radiating and measuring systems.
- Metrological support of geophysical and petrophysical measurements.
- Technical means and technologies of geophysical support wiring, geological-technological and workover operations in wells.
- Theoretical and experimental study of the relationship between petrophysical and physical properties of rocks with the results of geophysical fields measurement.
- Digital petrophysics, methods of determination of physical and facies
- Methods of physical and facies characterization from X-ray tomography data.

In the process of studying, postgraduate students receive theoretical and practical training and skills in research and scientific and pedagogical work, which allow them to work effectively after completing the study of the educational program in enterprises of various fields and industries in senior positions, as well as in research and educational organizations

LABOR MARKET NEEDS FOR PERSONAL TRAINING IN EDUCATIONAL PROGRAMME PROFILE

Graduates who have mastered this program are focused on work in Russian and international companies, enterprises, educational institutions, research organizations in various fields of industry related to subsoil use and mining sciences. State and commercial structures of science-intensive industries are interested in graduates, in particular, enterprises of oil and gas development and other leading industries, as well as for the development of an element base used in the digitalization of various sectors of the economy.

Graduates who have mastered this program are oriented to work in the Russian and international companies specializing in the exploration and development of mineral deposits:

design and development, production, operating organizations, research centers, higher educational institutions.

Analysis of the status and trends of development of research and educational activities in the field of mining and oil and gas field geology shows that the training of researchers in this industry is one of the necessary conditions for increasing the capacity and competitiveness of domestic educational institutions of higher education, research organizations and enterprises of mining and geological industry, carrying out within their activities scientific and educational.

In the professional sphere, the main consumers of the educational program are such organizations and enterprises in Russia as:

- Ministry of Energy of the Russian Federation
- Ministry of Natural Resources and Environment of the Russian Federation
- Federal Agency for Subsoil Use (Rosnedra);
- All-Russian Research Institute of Geology of Foreign Countries
- All-Russian Research Geological Oil Institute (VNIGNI, Moscow)
- All-Russian Research Institute of Organization, Management and Economics of Oil and Gas Industry (Moscow)
- Transneft, Gazprom, Zarubezhneft, Novatek; Yamal LNG; Caspian Pipeline Consortium, Tatneft, LUKoil, TNK, Slavneft, Rosneft, VSNK, Surgutneftegas, NGDU LeninogorskNeft, JSC All-Russian Oil and Gas Research Institute, Chevron Oil Corporation (USA), Elf Aquitaine Oil Company (France), Erdoyle Erdgas Oil and Gas Company (Germany), Vietsovpetro (Vietnam), Petron Industries Inc. etc…

3. REQUIREMENTS FOR APPLICANTS APPLYING TO THE PHD PROGRAMME

For admission to the program, the Admission Rules apply, approved by the relevant local regulatory act and posted in the public domain on the official website of the RUDN University.

4. STRUCTURE AND WORKLOAD OF THE EDUCATIONAL PROGRAMME FOR PhD STUDIES

Duration of mastering the postgraduate program: 3 years.
Form of education: full-time.
One credit unit corresponds to 36 academic hours.

No.	PhD programme structure	Workload, credit units
1	Scientific Component	150
1.1	Research activity aimed at preparing for a thesis defense	126
1.2	Preparation of publications and (or) patent applications provided for in paragraph 5 of the Educational Standard of RUDN University	18
1.3	Intermediate certification at the stages of scientific research	6
2	Educational Component	24
2.1	Disciplines (modules)	13
2.2	Internship	5
2.3	Intermediate certification in disciplines (modules) and internship	6
3	Final attestation	6
PhD programme workload in credit units:		180

5. CHARACTERISTICS OF EDUCATIONAL PROGRAMME GRADUATE'S PROFESSIONAL ACTIVITIES

The field of professional activity of graduates who have mastered this program of training of scientific and scientific-pedagogical personnel in postgraduate studies includes:

- Methods of processing and interpretation of the results of geophysical field measurements.

- Computer systems of processing, numerical inversion and complex interpretation of geological and geophysical data, including GIS-technologies.
- Use of geologic-geophysical data for the construction of digital geologic, hydrodynamic, geodynamic and other models of geologic environment and deposits.
- Geophysical monitoring of the geological structure and development of deposits by geophysical methods.
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- Metrological support of geophysical and petrophysical measurements.
- Technical means and technologies of geophysical support wiring, geological-technological and workover operations in wells.
- Theoretical and experimental study of the relationship between petrophysical and physical properties of rocks with the results of geophysical fields measurement.
- Theory, technical means, technologies, methods of collecting and interpreting logging information, interwell drilling, geologic and technological well investigations, geophysical methods of research, geological and geophysical methods.
- Technological well studies, geophysical methods of investigation of the technical condition of wells.
- Control of development of mineral deposits according to the data of ground and well geophysical surveys, including the monitoring of processes of hydraulic fracturing of reservoirs.
- Application of geophysical methods in solving environmental problems and monitoring of the environment, including permafrost rocks.…

6. LOCATION OF IMPLEMENTATION OF THE PHD PROGRAMME

The PhD program is implemented by the Federal State Autonomous Educational Institution of Higher Education Peoples' Friendship University of Russia named after Patrice Lumumba.

The information about partner organisations involved in the implementation of the PhD programme:

Internship and Scientific Research	Internship location
Pedagogical Training (stationary)	RUDN University, Moscow
Research activity aimed at preparing for a thesis defense (stationary)	RUDN University, Moscow; Third party organizations performing research and development, depending on the focus of the research

7. FEAUTURES OF EDUCATIONAL PROGRAMME IMPLEMENTATION

The PhD program is implemented with elements of DET (based on the TUIS platform).

The language of implementation of the PhD program is English.

The program is *not adapted* for teaching the disabled and people with disabilities.