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**Федеральное государственное автономное образовательное учреждение  
высшего образования «Российский университет дружбы народов»**

**Инженерная академия**

(наименование основного учебного подразделения (ОУП) – разработчика программы)

Утверждена на заседании  
Инженерной академии,  
протокол № 2022-08/22-04/2  
от «29» 04 2022 г.

**ПРОГРАММА ПОДГОТОВКИ НАУЧНЫХ И НАУЧНО-ПЕДАГОГИЧЕСКИХ  
КАДРОВ В АСПИРАНТУРЕ**

Научная специальность:

**2.1.9. Строительная механика**

(код и наименование научной специальности)

Направленность (профиль):

**Structural Mechanics**

(наименование программы подготовки научных и научно-педагогических кадров)

Программа подготовки научных и научно-педагогических кадров в аспирантуре  
разработана в соответствии с требованиями:

СУТ РУДН, утвержденных приказом ректора № 139 от «09» марта 2022 г.

Срок освоения программы подготовки научных и научно-педагогических кадров в  
аспирантуре:

**4 года**

(очная форма обучения)

Сведения об особенностях реализации программы: *программа на английском языке.*

СОГЛАСОВАНО:

Директор департамента  
строительства /  
Руководитель программы  
**Рынковская М.И.**

(подпись)

Начальник УОП  
**Воробьева А.А.**

(подпись)

Директор инженерной  
академии

**Разумный Ю.Н.**

(подпись)

Начальник УПКВК  
**Сафир Р.Е.**

(подпись)

2022 г.

## **1. PURPOSE OF THE POSTGRADUATE PROGRAM / ЦЕЛЬ ПРОГРАММЫ АСПИРАНТУРЫ**

The purpose of postgraduate studies is to guide the postgraduate student to the development of an academic career, maximum adaptation in the scientific environment. The goal is to solve the problems of building a nationally oriented economy and the formation of the necessary quality of "human capital". The goal is to prepare and defend a dissertation for the degree of candidate of sciences.

## **2. BRIEF SUMMARY OF THE PROGRAM / КРАТКАЯ АННОТАЦИЯ ПРОГРАММЫ**

Level of higher education - postgraduate studies - training of highly qualified personnel.

The term for obtaining education under the postgraduate program in full-time education, including vacations provided after passing the state final certification, is 4 years.

The volume of the postgraduate program is 240 credits and includes all types of classroom, independent and research work of a postgraduate student, internship, as well as the time allotted for quality control of mastering the educational program by a postgraduate student.

The types of professional activity of the graduate are research activities in the field of construction engineering and technology and teaching activities in educational programs of higher education.

The place of implementation of the program is the Engineering Academy of the Peoples' Friendship University of Russia (Russia, Moscow).

## **3. THE NEED OF THE LABOR MARKET FOR GRADUATES WHO HAVE COMPLETED THE POSTGRADUATE PROGRAM / ПОТРЕБНОСТЬ РЫНКА ТРУДА В ВЫПУСКНИКАХ, ОСВОИВШИХ ПРОГРАММУ АСПИРАНТУРЫ**

Postgraduate studies with the qualification "Researcher" and "Teacher-Researcher" allow you to prepare scientific and pedagogical workers in the direction of training the subgroup "Construction", the group of scientific specialties "Construction and Architecture", the scientific specialty "Structural Mechanics", responding to dynamically changing requirements and conditions in the modern labor market, in the main areas of professional activity in the field of construction, who own modern methods for evaluating technical and regulatory documents, systematized ideas, knowledge, skills in the field of practical activity, as well as the necessary skills and abilities of research work.

The qualification "Researcher" enables the graduate to solve the following professional tasks:

- analysis, systematization and generalization of the results of scientific research in the field of engineering and construction technology by applying a set of research methods in solving specific research problems;

- design, organization, implementation and evaluation of the results of scientific research in the field of construction using modern methods of science, as well as information and innovative technologies;

- organization of interaction with colleagues, interaction with allied enterprises, including foreign ones, search for new scientific partners in solving urgent research problems;

- using the existing opportunities of the educational environment of the university and designing new conditions, including informational ones, for solving research problems;

- implementation of professional and personal self-education, designing a further educational route and professional career, participation in experimental work.

The qualification "Teacher - Researcher" enables the graduate to solve the following professional tasks:

- studying the possibilities, needs and achievements of students of educational institutions of higher education, various specialized educational institutions, designing, based on the results obtained, individual routes for their training, education and development;

- organization of the process of training and education in the field of higher professional education using technologies that reflect the specifics of the subject area of graduate training;

- organization of interaction with colleagues, interaction with scientific partners, including foreign ones, search for new scientific partners, involvement of students in interaction with scientific partners;

- using the existing opportunities of the educational environment of the university and designing new conditions, including informational ones, to ensure the quality of education.

According to postgraduate study programs, one of the main conditions of study, in addition to obtaining education, is the preparation of a dissertation for the degree of candidate of science (PhD degree). Graduates of the RUDN University postgraduate course - holders of the PhD degree receive a PhD diploma.

#### **4. REQUIREMENTS FOR APPLICANTS APPLYING TO THE PROGRAM / ТРЕБОВАНИЯ К АБИТУРИЕНТУ, ПОСТУПАЮЩЕМУ НА ПРОГРАММУ**

Persons with at least a higher education (specialist or master's degree) are allowed to master the programs for the training of scientific and pedagogical personnel in graduate school.

Applicants take entrance examinations on:

- a special discipline corresponding to the direction of training of scientific and pedagogical personnel in the postgraduate study of the subgroup "Construction", the group of scientific specialties "Construction and architecture", the scientific specialty "Structural Mechanics".

Entrance examinations are conducted in writing (special discipline).

To master the postgraduate program in the direction of preparation of the subgroup "Construction", the group of scientific specialties "Construction and architecture", the scientific specialty "Structural Mechanics", you must have the following knowledge, skills and abilities:

- knowledge of general theoretical categories and concepts of building science;
- knowledge of the basic concepts and concepts in the scientific specialty "Building designs, buildings and constructions", as well as the main scientific works of scientists and methods for calculating building structures;
- ability to search and apply normative and technical documents; - the ability to write scientific articles;
- the ability to master educational and scientific literature, express their thoughts and participate in the discussion of the identified problems;
- writing skills;
- skills to perform research work;
- the ability to select, study, analyze, discuss monographic and other scientific research.

#### **5. STRUCTURE AND SCOPE OF THE PROGRAM FOR TRAINING SCIENTIFIC AND SCIENTIFIC-PEDAGOGICAL PERSONNEL IN POSTGRADUATE STUDIES / СТРУКТУРА И ОБЪЕМ ПРОГРАММЫ ПОДГОТОВКИ НАУЧНЫХ И НАУЧНО-ПЕДАГОГИЧЕСКИХ КАДРОВ В АСПИРАНТУРЕ**

The structure and volume of the postgraduate program - the period of development is 4 years in full-time.

<b>№</b>	<b>Structure of the Postgraduate Program</b>	<b>The scope of the PhD program in credits</b>
1. Scientific component		<b>210</b>
1.1.	Scientific activity aimed at preparing a dissertation for defense	178
1.2.	Preparation of publications and (or) applications for patents for inventions, utility models, industrial designs, selection achievements, certificates of state registration of programs for electronic computers, databases, topologies of integrated circuits provided for in paragraph four of clause 5 of federal state requirements	24
1.3	Intermediate certification at the stage of scientific research: Scientific activity aimed at preparing a dissertation for defense	8

2. Educational component		<b>24</b>
2.1.	Disciplines (modules)	<b>13</b>
2.2.	Practices, including teaching practice	<b>5</b>
2.3.	Intermediate certification in disciplines (modules) and practices	<b>6</b>
3. Final examination		<b>6</b>
Scope of the Postgraduate Program		<b>240</b>

## **6. CHARACTERISTICS OF THE PROFESSIONAL ACTIVITY OF A GRADUATE / ХАРАКТЕРИСТИКА ПРОФЕССИОНАЛЬНОЙ ДЕЯТЕЛЬНОСТИ ВЫПУСКНИКА**

### *Area of professional activity.*

The field of professional activity of graduates who have mastered the postgraduate program includes:

creation and improvement of rational types of structures, buildings, structures for various purposes and their complexes, as well as the development, improvement and verification of methods for their calculation justification;

improvement of existing and development of new machines, equipment and technologies necessary for the construction and production of building materials, products and structures;

improvement and development of new building materials;

solving scientific problems, tasks in the relevant construction industry, which are of great socio-economic or economic importance;

updating and improving the regulatory framework of the construction industry - in the field of designing construction projects;

conducting educational and educational-methodical work in educational institutions of higher education.

### *Objects of professional activity.*

The objects of professional activity are:

building structures, buildings, structures and their complexes, including hydrotechnical, environmental structures and transport infrastructure facilities;

loads and impacts on buildings and structures; building materials and products;

machines, equipment, technological complexes, automation systems used in construction.

### *Types of professional activity.*

Types of professional activities for which graduates who have mastered the postgraduate program are preparing:

research activities in the field of technical sciences and architecture;  
teaching activity on educational programs of higher education.

## **7. PLACE OF IMPLEMENTATION OF THE POSTGRADUATE PROGRAM / МЕСТО РЕАЛИЗАЦИИ ПРОГРАММЫ АСПИРАНТУРЫ**

7.1. The postgraduate program is implemented by the Russian University of Peoples' Friendship.

7.2. Information about the planned bases for conducting practices and (or) performing scientific research

<b>Practice and research*</b>	<b>Practice base</b> <i>(name of organization, location)</i>
Pedagogical practice (stationary)	RUDN University, Moscow
Scientific research (stationary)	RUDN University, Moscow

\* - the type of practice is indicated - its name (pedagogical, technological, etc.), method of conducting (stationary / visiting), or scientific research.

## **8. FEATURES OF THE IMPLEMENTATION OF THE POSTGRADUATE PROGRAM / ОСОБЕННОСТИ РЕАЛИЗАЦИИ ПРОГРАММЫ АСПИРАНТУРЫ**

8.1. The PhD program is implemented without the use of e-learning / digital / distance learning technologies.

8.2. The language of the PhD program is Russian/English.

8.3. The program is adapted for teaching the disabled and people with disabilities.