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

*Инженерная академия*

(наименование основного учебного подразделения (ОУП)-разработчика ОП ВО)

**THE WORKING PROGRAM OF THE DISCIPLINE**

**РАБОЧАЯ ПРОГРАММА ДИСЦИПЛИНЫ**

Building designs, buildings, and constructions/Строительные конструкции,  
зданий и сооружения (англ.)

(наименование дисциплины/модуля)

**Рекомендована МССН для направления подготовки/специальности:**

2.1.1. Building designs, buildings and constructions / Строительные  
конструкции, зданий и сооружения (англ.)

(код и наименование научной специальности)

**Освоение дисциплины ведется в рамках реализации основной профессиональной  
образовательной программы высшего образования (ОП ВО):**

Building designs, buildings and constructions / Строительные конструкции,  
зданий и сооружения (англ.)

(наименование программы аспирантуры)

**2023 г.**

## **1. Research purpose / цель выполнения научных исследований**

The purpose of performing scientific research (carrying out scientific (research) activities) is to prepare a dissertation for the degree of candidate of science (hereinafter referred to as the dissertation) for defense.

- a list of planned results based on the results of scientific research;
- volume of scientific research;
- an approximate plan for the implementation of scientific research;
- plan for the preparation of the thesis and publications, which set out the main scientific results of the dissertation;
- a list of stages in the development of the scientific component of the postgraduate program, the distribution of these stages and the final certification of postgraduate students.

## **2. Planned results of scientific research / планируемые результаты научных исследований**

Solving a scientific problem that is important for the development of the relevant branch of science, or developing a new scientifically based technical, technological or other solution that is essential for the development of the country.

Preparation of a dissertation for defense includes the implementation of an individual plan of scientific activity, writing, design and submission of a dissertation for final certification.

The plan of scientific activity includes an approximate plan for the implementation of scientific research, a plan for preparing a dissertation and publications that set out the main scientific results of the dissertation, as well as a list of stages for mastering the scientific component of the postgraduate program, the distribution of these stages and the final certification of postgraduate students.

*The plan of scientific activity of a particular student is approved in the individual plan of scientific activity of a postgraduate student, the requirements for which are established by the relevant local normative act of the RUDN University.*

## **3. SCOPE OF RESEARCH / ОБЪЕМ ВЫПОЛНЕНИЯ НАУЧНЫХ ИССЛЕДОВАНИЙ**

The total labor intensity of scientific research is 178 credits (6408 academic hours).

## **4. RESEARCH STAGES\* / ЭТАПЫ ВЫПОЛНЕНИЯ НАУЧНЫХ ИССЛЕДОВАНИЙ\***

*Table 5.1. Stages of scientific research*

| <b>Stage name</b> | <b>Stage content (topics, activities)Содержание этапа (темы, виды деятельности)</b> | <b>Labor intensity, acc.h.</b> |
|-------------------|---|--------------------------------|
| <b>1 course</b>   |   |                                |

| <b>Stage name</b>  | <b>Stage content (topics, activities)Содержание<br/>этапа (темы, виды деятельности)</b> | <b>Labor intensity,<br/>acc.h.</b> |
|--|---|------------------------------------|
| Section 1. Scientific activity of a postgraduate student aimed at preparing a dissertation for defense   | Introduction.   | 360                                |
| Section 2. Preparation of publications that present the main scientific results of the dissertation  | Safety briefings.   | 360                                |
| Section 3. Preparation of applications for patents for inventions, utility models, industrial designs, breeding achievements, certificates of state registration of programs, etc. | Conversation with the leader: drawing up a plan for scientific research.                | 432                                |
| Intermediate certification   |   |                                    |
| <b>TOTAL:</b>  |   | <b>1152</b>                        |
| <b>2 course</b>  |   |                                    |
| Section 1. Scientific activity of a postgraduate student aimed at preparing a dissertation for defense   | Statement of the purpose and objectives of the study.                                   | 540                                |
| Section 2. Preparation of publications that present the main scientific results of the dissertation  | Review and analysis of information on the research topic.                               | 540                                |
| Section 3. Preparation of applications for patents for inventions, utility models, industrial designs, breeding achievements, certificates of state registration of programs, etc. | Conducting theoretical and experimental research.                                       | 648                                |
| Intermediate certification   |   |                                    |
| <b>TOTAL:</b>  |   | <b>1728</b>                        |
| <b>3 course</b>  |   |                                    |

| <b>Stage name</b>  | <b>Stage content (topics, activities)Содержание этапа (темы, виды деятельности)</b> | <b>Labor intensity, acc.h.</b> |
|--|---|--------------------------------|
| Section 1. Scientific activity of a postgraduate student aimed at preparing a dissertation for defense   | Processing of experimental data, analysis of results.                               | 612                            |
| Section 2. Preparation of publications that present the main scientific results of the dissertation  | Preparation of a report and scientific publication.                                 | 612                            |
| Section 3. Preparation of applications for patents for inventions, utility models, industrial designs, breeding achievements, certificates of state registration of programs, etc. | Preparation of a report and scientific publication.                                 | 648                            |
| Intermediate certification   |   |                                |
| <b>TOTAL:</b>  |   | <b>1872</b>                    |
| <b>4 course</b>  |   |                                |
| Section 1. Scientific activity of a postgraduate student aimed at preparing a dissertation for defense   | Processing and registration of the results  | 540                            |
| Section 2. Preparation of publications that present the main scientific results of the dissertation  | Processing and registration of the results  | 540                            |
| Section 3. Preparation of applications for patents for inventions, utility models, industrial designs, breeding achievements, certificates of state registration of programs, etc. | Processing and registration of the results  | 576                            |
| Intermediate certification   |   |                                |
| <b>TOTAL:</b>  |   | <b>1656</b>                    |
| <b>TOTAL:</b>  |   | <b>6408</b>                    |

\* - the stages of scientific research are FULLY reflected in the review of the student's supervisor.

## **6. MATERIAL AND TECHNICAL SUPPORT OF THE SCIENTIFIC RESEARCH / МАТЕРИАЛЬНО-ТЕХНИЧЕСКОЕ ОБЕСПЕЧЕНИЕ ВЫПОЛНЕНИЯ НАУЧНЫХ ИССЛЕДОВАНИЙ**

1. Lecture rooms with multimedia projectors; laboratories with equipment and instruments for laboratory work.
2. Scientific laboratories equipped with appropriate equipment.
3. Computers for carrying out calculations and processing results and access to information systems.

## **7. RESEARCH METHODS / СПОСОБЫ ПРОВЕДЕНИЯ НАУЧНЫХ ИССЛЕДОВАНИЙ**

Scientific research can be carried out both in structural subdivisions of RUDN University or in organizations of Moscow (stationary), and at bases located outside of Moscow (exit).

Conducting scientific research on the basis of an external organization (outside RUDN University) is carried out on the basis of an appropriate agreement, which specifies the terms, place and conditions for performing scientific research in the base organization.

The deadlines for the implementation of scientific research correspond to the period indicated in the calendar academic schedule of the postgraduate program. The timing of the internship can be adjusted upon agreement with the Department for the Training of Highly Qualified Personnel of the RUDN University.

## **8. EDUCATIONAL-METHODICAL AND INFORMATIONAL SUPPORT OF THE SCIENTIFIC RESEARCH / УЧЕБНО-МЕТОДИЧЕСКОЕ И ИНФОРМАЦИОННОЕ ОБЕСПЕЧЕНИЕ ВЫПОЛНЕНИЯ НАУЧНЫХ ИССЛЕДОВАНИЙ**

### *Main literature:*

1. Federal Law of August 23, 1996 No. 127-FZ «On Science and State Science and Technology Policy»
2. Resolution of the Government of the Russian Federation of September 24, 2013 No. 842 «On the procedure for awarding academic degrees»

### *Additional literature:*

1. Shklyar M.F. Fundamentals of scientific research. M.: Publishing and Trade Corporation "Dashkov and Co", 2012. - 244 p.
2. Fundamentals of scientific research: textbook. allowance / B.I. Gerasimov and others. - M.: FORUM, 2011. - 269 p.
3. Denisov S.L. How to draw up a dissertation and abstract: Method. allowance. – 2nd ed., revised. and additional - M.: GEOTAR-Media, 2005. - 85 p.

4. Kuzin F.A. Dissertation: Methodology of writing. Design rules. Order of protection: pract. manual for doctoral students, graduate students and masters / Kuzin F.A.; ed. Abramova V.A. -M.: Os-89, 2008. - 447 p.

5. Mareev S.N. Philosophy of Science. Textbook for graduate students and applicants. - From: Infra-M, 2015.

*Resources of the information and telecommunications network "Internet":*

11. EBS of RUDN University and third-party EBS to which university students have access on the basis of concluded agreements:

- Electronic library system RUDN - EBS RUDN <http://lib.rudn.ru/MegaPro/Web>
- EBS "University Library Online" <http://www.biblioclub.ru>
- EBS Yurayt <http://www.biblio-online.ru>
- EBS "Student Consultant" [www.studentlibrary.ru](http://www.studentlibrary.ru)
- EBS "Doe" <http://e.lanbook.com/>

2. Databases and search engines:

- electronic fund of legal and normative-technical documentation <http://docs.cntd.ru/>
- Yandex search engine <https://www.yandex.ru/>
- Google search engine <https://www.google.ru/>
- SCOPUS abstract database <http://www.elsevierscience.ru/products/scopus/>

*Educational and methodological materials for scientific research\*:*

1. Guidelines for the preparation of dissertations, scientific publications.

\* - all educational and methodological materials for scientific research are posted in accordance with the current procedure on the practice page **in TUIS!**

**8. EVALUATION MATERIALS AND SCORE-RATING SYSTEM FOR ASSESSING THE LEVEL OF FORMATION OF COMPETENCES ON THE RESULTS OF THE SCIENTIFIC RESEARCH / ОЦЕНОЧНЫЕ МАТЕРИАЛЫ И СИСТЕМА ОЦЕНИВАНИЯ ОБУЧАЮЩИХСЯ ПО ИТОГАМ ВЫПОЛНЕНИЯ НАУЧНЫХ ИССЛЕДОВАНИЙ**

Mandatory activities of the student:

1 year of study:

- preparation and discussion at the department of the concept of the dissertation and approval of the topic;
- preparation of historiographical and experimental/source base of the research;
- presentation at a scientific conference;

2nd year of study:

- preparation and discussion at the department of part of the dissertation;
- presentation at a scientific conference;

- publication of at least two scientific articles, including one scientific article on the research topic in a publication included in the list of the Higher Attestation Commission and / or RUDN University or SCOPUS, Web of Science and others equivalent to them and / or approved by the RUDN Academic Council;

3rd year of study:

- preparation of the entire dissertation and presentation to the supervisor;
- publication of at least three scientific articles, including two scientific articles on the research topic in publications included in the list of the Higher Attestation Commission and/or RUDN University and SCOPUS, Web of Science, other equated to them and/or approved by the RUDN Academic Council;
- discussion of the dissertation at the meeting of the BUP;

4 year of study (if available):

- preparation of the entire dissertation and presentation to the supervisor;
- publication of at least three scientific articles, including two scientific articles on the research topic in publications included in the list of the Higher Attestation Commission and / or RUDN University and SCOPUS, Web of Science and others equivalent to them and / or approved by the RUDN Academic Council;
- discussion of the dissertation at the meeting of the BUP;

Based on the results of the stages of identifying scientific research, the graduate student submits a detailed oral or written report to the supervisor or to the meeting of the PMU. The report includes information characterizing the content of the postgraduate student's work and reflecting the implementation of scientific research.

The report should include information about:

- about the degree of readiness of the dissertation;
- on the preparation and publication of articles in journals included in the list of the Higher Attestation Commission, RSCI, Scopus, Web of Science and others equivalent to them and / or approved by the RUDN Academic Council;
- about the participation of a graduate student in scientific and technical events on the topic of his research;
- on participation in the research work of the department (with participation);
- other.

During the period of interim certification, the supervisor provides feedback on the quality, timeliness and success of the postgraduate student's stages of scientific (research) activities.

The results of scientific research for each year of study are determined by conducting an intermediate certification with grading "excellent", "good", "satisfactory", "unsatisfactory" and in the ECTS system (A, B, C, D, E). The basis for their nomination is the point-rating system adopted at the University.

**DEVELOPERS:**

**Ass. Professor at the Department of  
Civil engineering**



**Markovich A.S.**

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Должность, БУП

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Подпись

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Фамилия И.О.

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Должность, БУП

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Подпись

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Фамилия И.О.

**DIRECTOR AT THE DEPARTMENT:**

**Department of Civil engineering**



**Rynkovskaya M.I.**

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Наименование БУП

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Подпись

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Фамилия И.О.