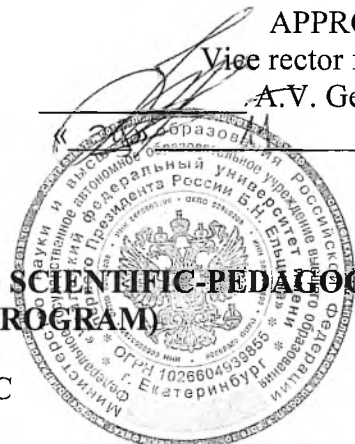


MINISTRY OF SCIENCE AND HIGHER EDUCATION OF THE RUSSIAN FEDERATION
Federal State Autonomous Educational Institution Higher Education
"Ural Federal University named after the First President of Russia B. N. Yeltsin"

Graduate School of Economics and Management

APPROVED BY
Vice rector for science
A.V. Germanenko
2023



**PROGRAM OF TRAINING OF SCIENTIFIC AND SCIENTIFIC-PEDAGOGICAL
PERSONNEL (DOCTORAL PROGRAM)**



CHARACTERISTIC

CONTROL IN ORGANIZATIONAL SYSTEMS

List of information about the doctoral program	Credentials
Doctoral Program	Code DP
<i>«Control in Organizational Systems»</i>	2.3.4.
Group of specialties	Specialty group code
<i>«Information Sciences and Telecommunications»</i>	2.3.
Federal State Requirements (FSR)	Order of the Ministry of Science and Higher Education of the Russian Federation No. 951 dated 20.10.2021
Self- Approved Requirements (SAR)	Order "On the implementation of the "Requirements for the development and implementation of training programs for scientific and scientific-pedagogical personnel in the graduate school of UrFU" No 315/03 dated 31.03.2022

Yekaterinburg
2023

Characteristic is compiled by the authors:

No	Full name	Academic degree, academic title	Position	Department	Signature
1	Dmitry B. Berg	Doctor of Physical and Mathematical Sciences, Professor	Professor	Department of Big Data Analysis and Video Analysis Methods	
2	Svetlana N. Lapshina	Candidate of Technical Sciences, Docent	Associate Professor	Department of Systems Analysis and Decision Making	
3	Irina D. Turgel	Doctor of Economics Sciences, Professor	Head of Department	Department of Theory, Methodology and Legal support of State and Municipal Administration	

Recommended:

by Ural Federal University Academic Council

Protocol No. 9 dated 27.11.2023

Director of School of Economics and Management



Irina D. Turgel

Agreed by:

Head of the Department of
Science and Pedagogical training



Elena A. Butrina

1. GENERAL CHARACTERISTIC OF THE DISCIPLINE

1.1. The characteristics of the doctoral program was developed on the basis of self-approved requirements (SAR) and the order of the rector "On the introduction of the "Requirements for the development and realization of training programs for scientific and scientific-pedagogical personnel in UrFU postgraduate studies" No. 315/03 dated 31.03.2022, describes general requirements for the results of mastering the program, corresponding to the characteristics of the future professional activity of the postgraduate, as well as the structure and conditions for the realization of the doctoral program.

1.2. List of regulatory documents:

- Federal Law No. 273-FZ of 29.12.2012 "On Education in the Russian Federation";
- Federal Law No. 127-FZ of 23.08.1996 "On Science and State Scientific and Technical Policy"
- Decree of the Government of the Russian Federation No. 2122 dated 30.11.2021 "On Approval of Regulations on the training of scientific and scientific-pedagogical personnel in graduate school (adjunct)";
- Order of the Ministry of Science and Higher Education of the Russian Federation No. 118 dated 02/24/2021 "On Approval of the Nomenclature of Scientific Specialties for which Academic Degrees are Awarded, and Amendments to the Regulations on the Council for the Defense of Dissertations for the Degree of Candidate of Sciences, for the Degree of Doctor of Sciences, approved by the Order of the Ministry of Education and Science of the Russian Federation dated 10 November 2017 No. 1093".
- Order of the Ministry of Science and Higher Education of the Russian Federation No. 951 dated 10/20/2021 "On approval of federal state requirements for the structure of training programs for scientific and scientific-pedagogical personnel in graduate school (adjunct), the conditions for their implementation, the timing of the development of these programs, taking into account various forms of education, educational technologies and the characteristics of certain categories of postgraduate students (adjuncts)";
- Regulations on awarding academic degrees in the Federal Autonomous State Educational Institution of Higher Education "Ural Federal University named after the First President of Russia B.N. Yeltsin" (Order No. 590/3 dated 07/19/2021);
- Requirements for the development and implementation of training programs for scientific and scientific-pedagogical personnel in the graduate school of UrFU (Order No. 315/03 dated 03/31/2022).

1.3. The doctoral program is coordinated with employers – social partners.

1.4. Form of study and duration of the doctoral program: *Full-time (3 years)*.

1.5. The volume of the doctoral program: *180 credit units*.

1.6. The main users of the doctoral program:

- employers;
- postgraduate students;
- teaching staff;
- administration and collective management bodies of the university.

1.7. Requirements for applicants:

Determined by the Rules for Admission to UrFU.

2. CHARACTERISTICS OF PROFESSIONAL ACTIVITIES

2.1. Field of professional activities of the postgraduate students

Postgraduates students will be able to carry out professional activities in the field of:

- modern information technologies, patterns of formation and development of the information

society, information properties and features of information processes, models of applied and information processes, models of data and knowledge, representation, search and processing of data and knowledge, methods and algorithms for solving problems in applied fields;

- technologies and means of industrial production, operation and improvement of software for information computing and control systems for various purposes;
- training and consulting on automation and informatization of solving applied problems and implementing information systems in applied areas.

Postgraduates students will be able to carry out professional activities in enterprises and organizations:

- in institutions of higher education;
- in state and local government bodies of the Russian Federation
- research institutes;
- in commercial and non-profit organizations.

2.2. Objects of professional activity of the graduate

The objects of professional activities of graduates are data, information, knowledge; applied information processes; software of computer equipment and automated systems (programs, software complexes and systems); mathematical, informational, technical, linguistic, software, ergonomic, organizational and legal support of information, computing and control systems; methods and tools for the development of technical means of computer equipment and control systems. software products; personnel involved in the life cycle processes of organizational systems.

2.3. Types and tasks of professional activity

The postgraduate student prepares for the following types and tasks of professional activity (Table 1):

Table 1. List of types of professional activity and their corresponding professional tasks

No	Type (types) of professional activity (TPA)	Professional tasks (PT)
1	<p>Research activities in the field of economics:</p> <ul style="list-style-type: none"> – fundamental research in the field of theory and methodology of the world economy as a science; – study of modern problems of the world economy, patterns of internationalization and globalization of economic relations, – study of mechanisms for regulating economic relations at the national, regional and global levels. 	<p>Research activities in the field of control in organizational systems:</p> <ul style="list-style-type: none"> – development of research programs; – collection, processing, analysis and systematization of information on the research topic, selection of methods and means for solving research problems; – development of models of the studied processes, phenomena and objects related to the field of professional activity, evaluation and interpretation of the results obtained; – organization and conduct of scientific research, including statistical surveys, etc. surveys.

2	<p>Teaching activity:</p> <ul style="list-style-type: none"> – development of training courses in the areas of professional activity, including on the basis of the results of theoretical and empirical research, including the preparation of methodological materials, textbooks and textbooks; – teaching of economic disciplines and educational and methodical work in the areas of professional activity; – conducting research work in an educational organization, including the management of research work students. 	<p>Teaching activity:</p> <ul style="list-style-type: none"> – study of domestic and foreign experience of teaching activities in the field of economics; – conduct of the educational process using modern pedagogical technologies; – development of author's curricula, methods and various forms of training; – development of various forms of control and various scales for assessing students' knowledge.
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3. STRUCTURE OF THE PROGRAM

3.1. The structure of the doctoral program includes three components: scientific components, educational components and final certification (Table 2).

Table 2. Components of a doctoral program

No	The name of the components of the doctoral program and their components	Form of evaluation
1	<i>Scientific component</i>	
1.1	The scientific activity of a postgraduate student aimed at preparing a dissertation for the degree of Candidate of Sciences (hereinafter - the dissertation) for defense	Intermediate attestation of research
1.2	Preparation of publications in which the main scientific results of the dissertation are presented, in peer-reviewed scientific publications, in scientific publications equivalent to them, indexed in the international databases Web of Science and Scopus and international databases determined in accordance with the recommendation of the Higher Attestation Commission under the Ministry of Science and Higher Education of the Russian Federation, as well as in scientific publications indexed in the scientometric database Russian Science Citation Index (RSCI) and (or) applications for patents for inventions, utility models, industrial designs, selection achievements, certificate of state registration of programs for electronic computers, databases, integrated circuit topologies	
2	<i>Educational component</i>	
2.1	Disciplines aimed at preparing and passing candidate exams: <ul style="list-style-type: none"> – History and philosophy of science; – Foreign language; – Special discipline (Control in Organizational Systems). 	Intermediate attestation based on the results of studying disciplines and internship

2.2	Electives: - Scientometrics and modern information and communication technologies in science - Higher school pedagogy; - Other disciplines (if available).	
2.3	Optional subjects (if available)	
2.4	Internship: - Pedagogical internship.	
3	<i>Final attestation</i>	Evaluation of the dissertation for compliance with the requirements of Federal Law No. 127-FL dated 23.08. 1996 "On Science and State Scientific and Technical Policy"

4. CONDITIONS FOR THE REALIZATION OF THE DOCTORAL PROGRAM

The University takes into account its material and technical resources, which are owned or legally obtained, for scientific activities, when developing a doctoral program. These resources include research infrastructure that supports the implementation of the doctoral program and allows for fundamental, exploratory, and applied scientific research. The University also engages in educational activities that contribute to the development of postgraduate students' skills and knowledge.

Each postgraduate student during the entire period of study is provided with individual unrestricted access to the electronic information and educational environment of the University from any point in which there is access to the information and telecommunications network "Internet" (hereinafter referred to as the "Internet"), both on the territory of the University and outside it.

The electronic information and educational environment of the university provides:

- access to curricula, work programs of disciplines and internship, electronic educational publications and electronic educational resources specified in the work programs of disciplines and internship;
 - formation of the student's electronic portfolio;
- functioning of the electronic service "Personal account of a postgraduate student".

In the case of the implementation of the doctoral program with the use of distance learning technologies, the electronic information and educational environment additionally provides:

- recording the progress of the educational process, the results of intermediate certification and the results of mastering the doctoral program;
- conducting all types of training sessions, procedures for evaluating learning outcomes, the implementation of which is provided with the use of e-learning, distance learning technologies;
- interaction between participants of the educational process, including synchronous and (or) asynchronous interaction via the Internet.

The functioning of the electronic information and educational environment is ensured by appropriate means of information and communication technologies and the qualifications of employees using and supporting it. The functioning of the electronic information and educational environment complies with the legislation of the Russian Federation.

4.1. Requirements for material, technical, educational and methodological support of the doctoral program

The auditoriums and laboratories for research, and all types of classes for Doctoral program, are provided with equipment and teaching aids, necessary for all courses (modules) and research.

Rooms for self-study are equipped with computers and Internet access and provide the access to electronic information and educational environment of the University.

The University is provided with the necessary set of licensed software for courses, research and is annually renewal if necessary.

Educational process is provided by ex-books and other training manuals based on at least one item in printed and (or) electronic form, sufficient for mastering the educational program, for each Postgraduate student in each discipline included in the individual plan. Postgraduate students are provided with access (remote access) to modern educational and methodological materials, library collections and library and reference systems, professional databases and information reference systems, the list of which is determined in the programs of courses and is periodically renewal if necessary.

Access to the electronic library system:

- Zonal Scientific Library <http://lib.urfu.ru/>
- Electronic catalog <http://lib.urfu.ru/course/view.php?id=76>
- Resources <http://lib.urfu.ru/course/view.php?id=169>
- EBSCOhost electronic resources: <https://search.ebscohost.com/>
- Electronic resources of the RSCI (elibrary.ru): <https://elibrary.ru/>
- Elsevier Electronic Resources: <http://reaxys.org>.

4.2. Requirements for the personnel conditions for the implementation of the doctoral program

The implementation of the doctoral program is provided by research and teaching staff of the university, as well as persons involved in the implementation of the doctoral program under the terms of a civil contract.

The qualification of teachers meets the qualification requirements specified in the qualification reference books and / or professional standards (if any).

The qualitative and quantitative composition of teachers participating in the implementation of the doctoral program and persons involved in the implementation of the doctoral program under the terms of a civil contract (based on the number of replacement rates reduced to integer values) is determined by the developer of the educational program, based on the need to achieve the indicator: at least 60 % of the number of full-time scientific and (or) research and teaching staff participating in the implementation of the doctoral program must have an academic degree (including an academic degree obtained in a foreign country and recognized in the Russian Federation) and / or an academic title (including an academic title obtained in a foreign country and recognized in the Russian Federation).

The scientific supervisor of the postgraduate student has a PhD degree, or in some cases, by the decision of the University, a PhD degree, or an academic degree obtained in a foreign country recognized in the Russian Federation; carries out scientific activities or participates in the implementation of such activities in the relevant field of research within the scientific specialty for the last 3 years; has publications on the results of implementation of the specified activity in peer-reviewed domestic or foreign publications; performs approbation of the specified activity, including participation with reports on the subject of scientific activity at Russian and international conferences over the past 3 years.

Scientific supervisors of postgraduate students are appointed and manage postgraduate students in accordance with clause 8 of the "Regulations on the training of scientific and scientific-pedagogical personnel in graduate school (adjunct)", approved by Decree of the Government of the Russian Federation No. 1222 dated 30.11.2021.

Requirements for the qualification of the teaching staff involved in the realization of the courses implemented in English are established in the educational program, taking into account clause 6.3 "Regulations on the assignment of the status of "English-speaking" and the implementation of training programs for scientific and pedagogical personnel in graduate school in English" (Order No. 811/03 dated 15.10.2018).

A scientific consultant has a Candidate of science degree, or a Doctor of science degree, or an academic degree obtained in a foreign country that is recognized in the Russian Federation.

4.3. Requirements for the financial support of the doctoral program

Financial support for doctoral program should be carried out in an amount not lower than the basic standard costs established by the Ministry of Science and Higher Education of the Russian Federation for the support government services in the field of education for the level of education and training direction, taking into account the correction coefficients, the specifics of educational programs in accordance with the Methodology for determining the standard costs for government services for the realization of educational programs of higher education in specialties (areas of training) and enlarged groups of specialties (areas of training), approved by Order of the Ministry of Education and Science of the Russian Federation No. 1272 dated 30.10.2015 (registered by the Ministry of Justice of the Russian Federation on 30.11.2015, registration No. 39898).

4.4. Requirements for the applied mechanisms for assessing the quality of educational activities and training of students in the doctoral program

The quality of educational activities and training of Postgraduate students is determined within the framework of the internal evaluation system, as well as the external evaluation system on a voluntary basis.

In order to improve the doctoral program, the university, conduct regular internal assessment of the quality of education, involving employers and their associations, other legal entities and (or) individuals, including university teachers.

Within the framework of the internal system for assessing the quality of educational activities and training, Postgraduate students are given the opportunity to assess the conditions, content, organization and quality of the educational process in general and in individual disciplines, internship and research.

External assessment of the quality of educational activities and training of students in the Doctoral program can be carried out within the framework of professional and public accreditation conducted by employers, their associations, as well as organizations authorized by them, including foreign organizations, or authorized national professional and public organizations that are part of international structures, in order to recognize the quality and level of training of postgraduates who have mastered the Doctoral program that meet the requirements of professional standards (if any), the requirements of the labor market for specialists of the relevant profile.

5. PROVISION OF INCLUSIVE EDUCATION FOR PERSONS WITH DISABILITIES AND THE DISABLED

To ensure inclusive education for people with disabilities and disabilities, the doctoral program implements adaptive learning environments.

6. EVALUATION OF THE ACHIEVEMENT OF RESULTS OF THE DOCTORAL PROGRAM

The planned results of the development of the educational program are formed in stages within the framework of the modules (if any) and their constituent disciplines. The formation of learning outcomes is distributed according to the disciplines of the educational program (Table 3).

Table 3. Formation of learning outcomes by discipline

Disciplines and activities	Learning Outcomes				
	Ability to identify and systematize the main ideas in scientific texts; critically evaluate any incoming information, regardless of the source of information; avoid automatic application of standard formulas and techniques in solving management tasks	Ability to apply modern methods, tools and technologies of research and project activities in the field of management	The ability to analyze, organize and assimilate the best practices of scientific research and to formalize the results of scientific research in publications, including those received personally by students in peer-reviewed scientific publications; to substantiate the author's contribution to the research, to evaluate its scientific novelty and practical significance	The ability to understand the main range of problems (tasks) encountered in the field of management, and the main problems, to make effective management decisions	Ability to develop educational programs in management based on a competent approach, a modular principle, a system of credit units; to select and use optimal methods of educating and evaluating students' academic performance
History and philosophy of science	X	X	X		X
Foreign language		X	X	X	X
Control in organizational systems	X	X	X	X	X
Higher school pedagogy		X	X	X	X
Pedagogical internship	X	X	X	X	X
Scientific research activities and preparation of a dissertation for the Candidate of Sciences degree	X	X	X	X	X
Submission of a dissertation for the Candidate of Sciences degree for defense (pre-defense)	X	X	X	X	X