НАО «КАЗАХСКИЙ НАЦИОНАЛЬНЫЙ ИССЛЕДОВАТЕЛЬСКИЙ ТЕХНИЧЕСКИЙ УНИВЕРСИТЕТ имени К.И.САТПАЕВА»

GRADUATE MODEL (Doctoral Studies)
Educational programs

8D07303 Civil engineering and production of building materials and structures

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CONTENT

Introduction

In the international educational space, the leading conceptual model for the preparation of PhD doctors is result-oriented education, which involves the introduction of a competence-based approach to learning.

One of the main results of the doctoral student's training in the educational program 8D07303 " Civil engineering and production of building materials and structures " is the acquisition of knowledge, skills and abilities necessary for effective problem solving in the field of design, construction and operation of industrial and civil facilities, building materials and products in demand, as well as woodworking and the latest technologies for the production of building materials, products and structures. One of the key competencies directly related to the professional activity of a graduate of a doctoral degree is the skills of personal and professional responsibility, ethics and communication, and others.

A PhD should be prepared for independent professional activity in the field of geospatial digital engineering, work in research institutions, etc. He must combine deep theoretical training with practical skills.

The uniqueness of the EP "Civil engineering and production of building materials and structures" is determined by the competencies possessed by a doctoral student who has been educated under this program.

The planning of the content of education, the way of organizing and conducting the educational process is carried out by the university and the scientific organization independently on the basis of credit technology of education.

The content of the doctoral program consists of:

1) theoretical training, including the study of cycles of basic

and core disciplines;

2) practical training of doctoral students: various types of practices, scientific or professional internships;

3) research work, including the execution of a doctoral dissertation,

4) final certification.

The content of the OP "Civil engineering and production of building materials and structures" on the basis of the development of a multi-level training system, the fundamental nature and quality of education, continuity and continuity of education and science, unity of training, education, research and innovation activities aimed at maximum satisfaction of consumer needs should ensure:

- training of professional and competitive specialists in the field of construction and production of building materials and structures;
- creation of new technologies in the field of construction and production of building materials and structures;
- the ability to apply knowledge of mathematics, fundamental and technical sciences;

- using methods of analysis and evaluation of experimental results.

The specialist model provides for: competencies due to the development of modern science and technology; competencies dictated by the requirements of the profession, specialty; competencies due to the socio-political system of the country, its spiritual and moral system.

To acquire a set of professional, intercultural, and communicative competencies, a graduate must master the knowledge of a set of general education (OOD), basic (DB) and specialized (PD) disciplines, both their mandatory component and a component of choice in accordance with the chosen trajectory of education in full, established by the state standard.

The ability to navigate the information flow is important in the modern world: the ability to find and systematize various sources of information according to a certain criterion; use rational ways to obtain, transform, systematize and store information, update it in necessary situations of intellectual and cognitive activity, possession of modern technologies in the field of geospatial digital engineering, geodesy, cartography, geoinformatics, etc. the ability to critically evaluate information.

1 Goals and objectives of the educational program 8D07303 Civil engineering and production of building materials and structures"

Goal: The innovative educational program trains personnel focused on scientific, experimental research, pedagogical activities in the field of design, construction and operation of industrial and civil facilities, building materials and products in demand, as well as woodworking and the latest technologies for the production of building materials, products and structures.

Tasks of the EP:

- ensuring the quality of education through the presentation of mandatory requirements for the level of training of doctoral students and educational activities of higher educational institutions;
- regularization of the rights of subjects of educational activity;
- improving the objectivity and informativeness of the assessment of doctoral students' training and the quality of educational programs;
- creating conditions for academic mobility of doctoral students;
- ensuring the functioning of the unified educational space of Kazakhstan;
- ensuring the recognition of documents of the Republic of Kazakhstan on the award of the academic degree of doctor (PhD) or doctor in the international educational space and on the international labor market.

2 List of qualifications and positions

A graduate of the specialty 8D07303 " Civil engineering and production of building materials and structures " is awarded the degree of Doctor of Philosophy (PhD) after defending his doctoral dissertation.

Qualifications and positions are determined in accordance with the National Qualifications Framework (NQF), approved by the protocol of March 16, 2016 by the Republican Tripartite Commission on Social Partnership and Regulation of Social and Labor Relations.

The field of professional activity

The field of professional activity of graduates are: research, creation of new and reconstruction of existing foundation structures and foundations in special ground conditions, and building structures; development and development of highly efficient geotechnologies that ensure reliable operation of foundations and foundations, and building structures in difficult engineering and geological conditions; development of new testing methods for foundations and ground foundations, and construction structures, reliable prediction of the building properties of the soil foundations of buildings and structures.

A special feature of this program is the training of graduates who are able to conduct the following *types of professional activities*:

— research;

— production and management;
— pedagogical;
— organizational and technological;
— design;
— calculated;
— design room.

The subject of professional activity:

— substantiation of a set of technical, technological, economic, environmental and social criteria for evaluating decisions in the field of design, construction, operation and reconstruction of buildings and structures;

— analysis of the work and evaluation of building systems using physical, mathematical and computer modeling of geotechnical processes;

— carrying out research work on the design and reconstruction of construction facilities using modern methods and means of management, control and analysis;

— implementation of educational and pedagogical activities in the system of higher and postgraduate education.

Objects of professional activity

— organizations and enterprises of any form of ownership engaged in the design, construction and operation of construction production facilities;

— central and local government bodies, where issues of technical progress, implementation, modernization, improvement of construction production and building structures are resolved;

— research institutes and organizations;

— higher education institutions.

3. Descriptors

The requirements for the level of training of a doctoral student are determined on the basis of the Dublin descriptors of the second level of higher education (Master's degree) and reflect the acquired competencies expressed in the achieved learning outcomes.

Learning outcomes are formulated both at the level of the entire educational program of the doctoral program, and at the level of individual modules or academic discipline.

Descriptors reflect learning outcomes that characterize the student's abilities:

1. Demonstrate developing knowledge and remembrance in the studied

areas of geospatial digital engineering based on advanced knowledge of this field in the development and application of ideas in the context of research;

2. To apply at a professional level their knowledge, understanding and abilities to solve problems in a new environment, in a broader interdisciplinary

context;

3. To collect and interpret information to form judgments taking into account social, ethnic and scientific considerations;

4. Clearly and unambiguously communicate information, ideas, conclusions, problems and their solutions;

5. Learning skills necessary for independent continuation of further education in the field of geospatial digital engineering

4. Competencies upon completion of study

4.1 Requirements for the key competencies of doctoral graduates, must:

1.Have an idea:

- about the main stages of development and paradigm shift in the evolution of science;
- on the subject, ideological and methodological specifics of the natural (social, humanitarian, economic) sciences;

2. To know and understand:

- current trends, trends and patterns of development of Russian science in the context of globalization and internationalization;
- methodology of scientific knowledge;
- achievements of world and Kazakh science in the relevant field;

3. Be able to:

- to organize, plan and implement the process of scientific research;
- analyze, evaluate and compare various theoretical concepts in the field of research and draw conclusions;
- analyze and process information from various sources;
- to conduct independent scientific research, characterized by academic integrity, based on modern theories and methods of analysis;

4. Have skills:

- critical analysis, evaluation and comparison of various scientific theories and ideas;
- analytical and experimental scientific activities;

5. Be competent:

- in the field of scientific and scientific-pedagogical activity in the context of rapid updating and growth of information flows;
- in conducting theoretical and experimental scientific research;
- in setting and solving theoretical and applied problems in scientific research;

4.2 Requirements for the Doctoral student's research work (R&D)

1) The research topic should correspond to the main issue on which the doctoral dissertation is being defended.

2) Be relevant and contain scientific novelty and practical significance.

3) Be based on modern theoretical, methodological and technological achievements of science and practice.

4) It is performed using modern scientific research methods.

5) Contain research (methodological, practical) sections on the main protected provisions.

4.3 Requirements for the organization of practices

The educational program 8D07303 " Civil engineering and production of building materials and structures " includes two types of practices: pedagogical and research.

Pedagogical practice is conducted in order to develop practical skills in teaching and learning methods. At the same time, doctoral students are involved in conducting undergraduate and graduate studies at the discretion of the university.

The doctoral student's research practice is conducted in order to study theoretical, methodological, and technological achievements. Russian and foreign science, modern methods of scientific research, processing and interpretation of experimental data in dissertation research.

5 Requirements for completing studies and obtaining a diploma

Persons who have mastered the educational program of doctoral studies and defended their doctoral dissertation, with a positive decision of the dissertation councils of a university with a special status or the Committee for Control in the field of education and Science of the Ministry of Education and Science of the Republic of Kazakhstan, according to the results of the examination, are awarded the degree of Doctor of Philosophy (PhD) or doctor in profile and a state-issued diploma with an appendix (transcript). Persons who have received a PhD degree, in order to deepen scientific knowledge, solve scientific and applied problems on a specialized topic, perform a postdoctoral program or conduct scientific research under the guidance of a leading scientist of the chosen university.