

Water Supply, Sewerage, Construction Systems for Water Protection

Far Eastern Federal University

Degree or qualification is awarded: **Candidate of Sciences**

Language of study: **Russian**

Mode of study: **full-time, part-time**

Duration: **4 years**

Availability of free education: **yes**

Price: **320 000 rub per year (full-time) / 160 000 rub per year (part-time)**

Programme webpage at the university website:

<https://www.dvfu.ru/upload/medialibrary/a06/%D0%9F%D0%B5%D1%80%D0%B5%D1%87%D0%B5%D0%BD%D1%8C%20%D0%BF%D1%80%D0%BE%D0%B3%D1%80%D0%B0%D0%BC%D0%BC%20%D0%B0%D1%81%D0%BF%D0%B8%D1%80%D0%B0%D0%BD%D1%82%D1%83%D1%80%D1%8B,%20%D0%BE%D0%B1%D1%8A%D1%8F%D0%B2%D0%BB%D0%B5%D0%BD%D0%BD%D1%8B%D1%85%20%D0%B2%20%D0%BD%D0%B0%D0%B1%D0%BE%D1%80%202020%20%D0%B3%D0%BE%D0%B4%D0%B0.pdf>

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The peculiarity of the postgraduate program "Water supply, sewerage, construction systems for water protection" is related to the specifics of professional tasks, such as the need for computer modeling in solving hydraulic problems and technological modeling in the design and operation of water treatment facilities, the connection of water supply and sanitation problems with environmental safety.

The graduate will be able to master the following competencies:

- the ability to apply knowledge about water supply and sanitation systems in practice, to generalize the results of field surveys and model studies, to formulate conclusions and practical recommendations based on scientific research;
- the ability to master an interdisciplinary approach as a methodological basis for physical and chemical research in the field of water supply and sanitation; to master the methods of expedition, field and stationary work;
- ability to carry out the procedure for evaluating physical and chemical factors, the environment for use in applied and scientific activities;
- readiness to use the results of modern research for analysis and forecasting, to use new domestic and foreign experience in the field of water supply and sanitation.

Each training cycle of the educational program has a basic part and a variable one. The variable part provides an opportunity to expand and deepen the knowledge, skills and competencies determined by the content of basic disciplines, and allows a graduate student to gain in-depth knowledge, skills and competencies for successful professional activity.

Research work of postgraduates is based on studying the possibilities of using advanced technologies in water supply systems, developing modern systems and devices with high efficiency, taking into account regional climatic features, and developing skills of creative, non-standard approach to solving professional

problems.

"Innovative technologies for water transportation, water treatment and wastewater treatment" - the discipline covers the study of advanced technologies used in water and wastewater treatment. The discipline examines various approaches to determining the quality of natural water from the point of view of its suitability for use in water supply, a detailed study of the chemical, physical and biological degradation of pollutants in drinking water and wastewater.

"Modeling of physical and chemical processes of water supply and sanitation systems and structures" - the discipline covers the study of patterns of groundwater movement in the design and operation of groundwater intakes, the study of filtration models, sorption, flotation, as well as chemical and biological processes of destruction of pollutants and models of the distribution of impurities in water bodies.

"Methods of planning and processing experimental results" - the discipline provides an understanding of the basic concepts and principles of engineering experiments. The theory of similarity of physical processes and the basics of mathematical modeling are studied. The ability to plan an engineering experiment is being formed.

"System approach to solving problems of heat and mass transfer" - the discipline develops skills of system solution of engineering research problems and provides examples of using mathematical modeling as a tool for analyzing the functioning of the system.

"Equipment for research and implementation of physical and chemical processes of water treatment, wastewater treatment and water transportation" - the discipline provides theoretical knowledge and practical skills to work on research and technological equipment used in the development and implementation of technologies in the field of water resources protection and consumption.

"Innovative technologies for water transportation, water treatment and wastewater treatment" - discusses various approaches to determining the quality of natural water from the point of view of its suitability for use in water supply, a detailed study of the chemical, physical and biological degradation of pollutants in drinking water and wastewater, studies methods for calculating modern installations for water treatment and wastewater treatment, solves practical problems of operation, design and implementation of advanced technologies for water and wastewater treatment.

Specializations within this programme