

# Land Hydrology, Water Resources, Hydrochemistry

Far Eastern Federal University

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

Language of study: **Russian**

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

Duration: **3 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 purpose of the educational program is to acquire the level of competencies necessary for the implementation of professional activities and preparation for the defense of a scientific and qualification work (dissertation) for the degree of candidate of sciences and in the preparation of scientific and scientific and pedagogical personnel of the highest qualification of a geographic profile for science, education and practical activity in the field of land hydrology.

The objectives of the educational program are: preparation for the successful passing of examinations for the candidate minimum; preparation and writing of scientific papers necessary for the successful defense of a thesis for a Ph.D. degree in the specialty "Land hydrology, water resources, hydrochemistry" in accordance with the requirements of the Higher Attestation Commission; in-depth study of water bodies on land and the processes occurring in them, spatio-temporal patterns of river flow distribution and water quality; methods for assessing, calculating and forecasting hydrological and hydrochemical characteristics; mastering the methods of comparative analysis of the formation of river runoff under the influence of natural and natural-anthropogenic factors, methods of hydroecological forecasting.

The objects of professional activity of graduates who have mastered the postgraduate program are: Earth and its main geospheres - lithosphere, hydrosphere, atmosphere, biosphere, their composition, structure, evolution and properties; natural, natural-economic, anthropogenic, industrial, recreational, social, territorial systems and structures at different levels, their research, monitoring of the state and development forecasts; nature management; geographic information systems; territorial planning, design and forecasting; ecological expertise of all forms of economic activity; education and enlightenment of the population.

The area of professional activity of graduates who have mastered

the postgraduate program, includes solving problems requiring the application of fundamental and applied knowledge in the field of Earth Sciences, participation in the environmental examination of projects and the development of a hydrological justification for projected water pipelines, reservoirs, dams, hydroelectric power plants, construction sites; participation in the development of physical and mathematical models for the development of floods and floods; study of physical and chemical processes occurring in watercourses on land and their interaction with the atmosphere, earth's surface and biosphere. Graduates of graduate school organize and conduct special hydrological observations; make operational forecasts of the hydrological situation of different lead times and collect the necessary information; make scientific recommendations on the rational use of the resources of rivers, lakes and reservoirs, the prevention of dangerous hydrological phenomena while ensuring the safety of life of the population, social and industrial facilities, the reliability of water consumption and water use, the stability of the elements of the river network, water ecosystems, consumer properties of water resources.

The postgraduate educational program is aimed at mastering all types of professional activities for which the graduate is preparing. The basic part includes History and Philosophy of Science, Foreign Language. The compulsory disciplines of the variable part include: Organizational and managerial foundations of higher education, Modern educational technologies in higher education, Dynamics of hydrometeorological processes, as well as Land hydrology, water resources, hydrochemistry. The choice of the variable part of the disciplines (Stochastic modeling in hydrology, Numerical models of spatio-temporal fields in hydrology, Information resources in scientific research) is aimed, first of all, at an in-depth study of physical processes in the atmosphere, ocean, land water bodies and forecasting hydrometeorological fields.

The main areas of professional activity are: bodies of the Federal Service for Hydrometeorology and Environmental Monitoring; bodies of the Ministry of Emergency Situations; bodies of nature protection and environmental management; institutions of the military-industrial complex; forecasting organizations serving various sectors of the economy; academic and research institutions related to the study of the hydrosphere, with the assessment of climate change; institutions of higher and secondary specialized education.

### **Specializations within this programme**