

Acoustics

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 types of professional activities for which graduates who have mastered the postgraduate program are preparing:

- research activities in the field of physics and astronomy;
- teaching activities in the field of physics and astronomy.

The postgraduate program is aimed at mastering all types of professional activities for which the graduate is preparing.

The area of professional activity of graduates who have mastered the postgraduate program includes solving problems that require the application of fundamental knowledge in the field of physics and astronomy.

1. Development of the physical foundations of generation, radiation and propagation of elastic waves in various media and structures, interaction with matter and waves of other physical nature. The search for ways to create highly efficient ways and methods of transmission and processing of signals.
2. Study of linear and nonlinear processes of radiation, propagation, diffraction, scattering, interaction and transformation of waves in natural and artificial media. Development and application of technical means for sensing media and structures, taking into account industry development trends
3. Development, research and creation of new acoustic systems and devices, antenna systems, correct mathematical models for the analysis and synthesis of electronic devices and units intended for the development of the resources of the World Ocean, the earth's crust.
4. Development, research and creation of new acoustic systems and devices, devices for the study of biological objects
5. Research and application of methods of physical and mathematical analogies in the analysis and synthesis of software and hardware complexes and systems

6. Development of physical foundations and creation of new wave technologies for modification and processing of materials.

7. Development of theoretical and technical foundations for new methods and systems of underground and underwater communications, navigation, active and passive location systems based on the use of radiation and reception of wave fields of various physical nature and the development of new frequency ranges.

The objects of professional activity of graduates who have mastered the postgraduate program are: physical systems of various scales and levels of organization, their functioning processes, physical, engineering-physical and environmental technologies, physical examination and monitoring; technological systems, technical means, providing transmission, emission and reception of signals, images, sound via wire, radio, underground, underwater and other systems: communication networks and switching systems; multichannel systems, systems and devices for radio communication, electroacoustics and speech informatics, means of metrological support of acoustic and hydroacoustic systems; management of operational and service maintenance of hydroacoustic devices; biomedical devices and systems; systems for forecasting natural disasters.

The main professional educational program is a complex of the main characteristics of education (volume, content, planned results), organizational and pedagogical conditions, forms of certification, which is presented in the form of annotations (general characteristics) of the educational program, curriculum, calendar curriculum, work programs of disciplines (modules), practice programs, research programs and state final / final certification, including assessment tools and methodological materials, as well as information about the actual resource provision of the educational process.

The Department has been closely cooperating with telecommunications organizations and enterprises of the Far East region, and with individual enterprises for more than 50 years. Every year they send requests for graduates of the Acoustics educational program. Graduates of postgraduate studies are in demand in design, research institutes and higher educational institutions, instrument-making manufacturing enterprises and organizations, state security bodies and administrations (Limited Liability Company "Arctic", Federal State Budgetary Institution of Science "Institute of Automation and Control Processes of the Far Eastern Branch of the Russian Academy Sciences").

Specializations within this programme