

Differential Equations, Dynamical Systems and Optimal Control

Far Eastern Federal University

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

Language of study: **Russian**

Mode of study: **full-time**

Duration: **4 years**

Availability of free education: **yes**

Price: **305 000 rub per year**

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 qualifying work (dissertation) for the degree of candidate of sciences.

A graduate who has mastered the postgraduate program 01.06.01 Mathematics and Mechanics, prepared for the independent formulation and solution of complex theoretical and applied problems in the field of fundamental and applied mathematics, mechanics and other natural sciences.

Objectives of OOP - acquiring knowledge, skills and abilities in accordance with the requirements for the level of mastering OOP

Postgraduate students must acquire the following knowledge, skills and ownership:

Know

- methods of research activities,
- theoretical foundations, methods for solving and analyzing the correctness of boundary value problems for differential equations,
- modern methods of data processing and interpretation using computer technology,
- requirements for registration of research results and their presentation

Be able to

- analyze alternative ways of solving research and practical problems and assess the risks of their implementation,

□ use the provisions and categories of philosophy of science to analyze and evaluate various facts and phenomena,

□ make personal choices in various professional and moral-value situations, evaluate the consequences of the decision made and bear responsibility for it before oneself and society,

□ develop mathematical models, methods and algorithms for solving,

□ use modern methods of data processing and interpretation using computer technology,

□ present research results and present them in the form of scientific publications and presentations

Own

□ the skills of analyzing the main worldview and methodological problems, incl. interdisciplinary character arising in science at the present stage of its development,

□ technologies for assessing the results of activities to solve professional problems,

□ skills in applying modern information and communication technologies,

□ technology of designing the educational process,

□ analytical and numerical methods for solving differential equations,

□ skills of using modern software for data processing and interpretation,

□ skills in presenting research results and presenting them in the form of scientific publications and presentations

The area of professional activity of graduates who have mastered the postgraduate program includes the entire set of objects, phenomena and processes of the real world:

□ in the scientific and industrial sphere - high-tech high-tech production of the defense industry, aerospace, aircraft, mechanical engineering, design and creation of new materials, construction, research and analytical centers of various profiles,

□ - in the socio-economic sphere - funds, insurance and management companies, financial organizations and business structures, as well as educational institutions of higher education.

The objects of professional activity of graduates who have mastered the postgraduate program are concepts, hypotheses, theorems, physical and mathematical models, numerical algorithms and programs, methods of experimental study of the properties of materials and natural phenomena, physical and chemical processes that make up the content of fundamental and applied mathematics, mechanics and others. natural sciences.

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

research activities in the field of fundamental and applied mathematics, mechanics, natural sciences;

teaching activities in the field of mathematics, mechanics, computer science.

Modern society is characterized by an increased interest in technologies for collecting, managing and analyzing spatial data. It came to the realization that without a single information space implemented in the form of spatial data infrastructures (SDIs), progressive business development is unthinkable.

Specializations within this programme