

# Computational Mathematics

Far Eastern Federal University

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

Language of study: **Russian**

Mode of study: **full-time**

Duration: **3 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%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 (EP) is to acquire the level of competencies necessary for the implementation of professional activities and preparation for the defense of a scientific qualification work (dissertation) for the degree of candidate of sciences.

A graduate who has mastered the postgraduate program 02.06.01 Computer and Information Sciences, prepared for the independent formulation and solution of complex theoretical and applied problems in the field of fundamental and applied mathematics, mechanics, physics and other natural sciences.

Tasks of the main EP - obtaining knowledge, skills and knowledge in accordance with the requirements for the level of mastering the basic EP.

The area of the real 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, in the socio-economic sphere, as well as educational organizations 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 that make up the content of fundamental, applied and computational mathematics, mechanics, physics and other 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, informatics, information technology, mathematical modeling, the creation of software systems, operating systems, databases, modern network technologies; teaching activities in the field of fundamental and applied mathematics, computer science, information and communication technologies.

Currently, the importance of the profession of applied mathematician and programmer in the development of scientific and technological progress of society is significantly increasing. The introduction of mathematical modeling and new information technologies in all areas of activity is directly related to this profession.

The choice of disciplines of the variable part for the formation of general professional and professional competencies of a graduate, taking into account modern requirements for scientific and qualification works and employers' requests, is justified by the need to teach graduate students modern concepts of theoretical and applied mathematical disciplines (such as computational mathematics, methods of mathematical modeling, methods of regularization of

incorrect problems, distributed parameter systems control, finite difference method, finite element method, catastrophe theory), analyze modern fundamental mathematical problems, develop highly efficient numerical algorithms for solving mathematical and applied problems.

The postgraduate students are supervised by experienced professors and associate professors of the Department of Informatics, Mathematical and Computer Modeling. Among them are well-known scientists in Russia and abroad: Doctor of Phys.-Math. Sciences G.V. Alekseev, Doctor of Phys.-Math. Sciences A.E. Kovtanyuk and Doctor of Phys.-Math. Sciences I.V. Prokhorov. They are the authors of a large number of scientific articles published in well-known Russian and foreign journals, and a number of monographs in various fields of computational mathematics and mathematical physics.

Head of OP G.V. Alekseev has many years of experience in leading undergraduates and postgraduates. Under his leadership, 14 candidate and two doctoral dissertations were defended.

Period of study: full time – 3 years.

### **Specializations within this programme**