

Applied mathematics and informatics

National Research Nuclear University MEPhI (Moscow Engineering Physics Institute)

Degree or qualification is awarded: **Bachelor's degree**

Language of study: **Russian**

Mode of study: **full-time**

Duration: **4 years**

Availability of free education: **yes**

Price: **103 200 rub**

Programme curator: **Ryabov P.N.**

Tel.:

E-mail: pnyabov@mephi.ru

The purpose of the program:

Formation of theoretical and practical knowledge and skills of students for successful work in the field of research and development (R&D) in high-tech sectors of the economy

Annotation:

This educational program is the quintessence of advanced mathematical training with training in the field of IT. In the process of mastering the program, students receive in-depth knowledge in the field of:

- development of mathematical models describing the behavior of complex systems of various nature (physical, economic, technological, etc.);
- mathematical algorithms and statistical data processing and data analysis methods (including neural network approaches and machine learning methods)
- modern programming languages, databases, network technologies and parallel programming technologies;
- development and application of digital software solutions for a wide range of tasks;

The central place in the curriculum of students is occupied by research work, under the guidance of scientists involved in scientific projects in relevant areas of basic and applied research. This allows students to develop the ability to work in a team, think critically, generate new ideas, and develop independent work skills.

Program relevance:

The speed and development trends of modern science and information technology dictates an acute need for personnel capable of efficiently and efficiently solving problems arising in the process of functioning of state and commercial enterprises, quickly adapting to market requirements. In the context of global digitalization, a huge layer of problems arises that require a modern engineer to know the knowledge that lies at the junction of applied mathematics and information technology, which ensures the program's relevance. As an example, we can give the tasks associated with the analysis and processing of data, mathematical modeling, optimization, the development of high-tech software for solving scientific and scientific-practical problems, etc., which graduates of the program successfully cope with

Core disciplines:

Numerical methods	Data bases
Methods of optimization	Concurrent programming
Mathematical and Theoretical Physics	Programming languages(C/C++, Python)
Digital signal processing	Introduction to neural network theory

PROFESSIONAL ACTIVITY

Alumni Competencies:

Graduates of the program have special practice-oriented competencies in the field of applied mathematics and information technology. Graduates are able to use and adapt existing mathematical methods and programming systems for the development and implementation of algorithms for solving various problems, to understand, improve and apply modern mathematical apparatus; able to collect, process and interpret data; use modern computer technology, multiprocessor supercomputers and specialized software; able to think critically and creatively, rethink accumulated experience; capable of business communication in oral and written forms in the state language of the Russian Federation and a foreign language.

Labor market demand:

Our graduates are in demand on the Russian and international labor markets and occupy leading positions in such state organizations and commercial companies, research institutes, universities and research laboratories

как:

- o Rosatom
- o University of Manchester, England
- o University of Göttingen, Germany
- o KTH Royal Institute of Technology, Sweden
- o Imperial college, London
- o Sberbank
- o Hewlett Packard
- o Mail.ru
- o Yandex
- o Oracle
- o Samsung

Practice and internships:

As part of the training, students practice at the international scientific laboratory "Methods of Nonlinear Mathematical Physics and Mathematical Modeling" NRNU MEPhI, in the largest scientific centers of the Russian Academy of Sciences, such as the Institute of Applied Mathematics M.V. Keldysh, SIC Kurchatov Institute, FIC "Fundamentals of Biotechnology" and others, in the enterprises of the state corporation ROSATOM, as well as in large IT companies.

Specializations within this programme