

Mathematics and Computer Sciences

Kazan (Volga Region) Federal University

Language of study: **Russian**

Mode of study: **full-time**

Duration: **4 years**

Availability of free education: **yes**

Price: **148 620 RUB per year**

Programme webpage at the university website: <https://kpfu.ru/eng/academic-units/physics-mathematics-and-it/limm>

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Profile: «Data science»

The purpose of the program is complex and quality training of qualified competitive specialists in modern mathematics and computer science.

Computer and mathematical modeling and data science form the basis of digital economics. Data science combines various subjects connected with each other by common object, data. The main aim of this science is in extraction of probable or quite implicit information from a huge amount of data of different origin. Computer and mathematical modeling allows us to create digital models of complicated objects, e.g., airfoils, oil wells, behavior of players on the stock exchange, etc.

Educational process has a fundamental nature. It is based on learning classical mathematical subjects and courses of informatics. The program involves: calculus, mathematical and computer algebra, mathematical logics and discrete mathematics, computer geometry, number theory, differential equations, stochastic analysis, programming technologies and languages, numerical methods, algorithms and data structures, database management, cryptography, methods of artificial intelligence: robust statistics, machine learning, optimization methods, image recognition, restoring patterns by empirical data, etc. Training in information technology is fulfilled on the basis of the Python language which is a recognized standard among specialists in data science.

In the study of disciplines various mathematical packages are used such as Wolfram Mathematica, Maple, MatLab, and Sage. Students learn to prepare mathematical texts with the help of TeX and MathML, to program in C++ and R languages.

On the third year students prepare research course works. On the fourth year they fulfill graduating works, which either are an independent scientific research or usage of mathematical and/or computer modeling, data analysis for solving concrete applied problems.

Main professional competences of graduates.

A graduate who has completed the undergraduate program is ready to:

- usage of methods of mathematical and algorithmic modeling in analysis of applied problems;
- usage of basic mathematical methods and principles in research;
- data collection and processing with the help of modern methods of information analysis and computers;
- usage of mathematical methods of information processing;
- solving of applied problems connected with secure information technology and systems;
- participation in the work of seminars, conferences, and symposiums, preparing of scientific publications;

- teaching physical and mathematical courses in general and professional educational organizations.

Area of professional activity where our graduates have the advantage

Fundamental mathematical research, bioinformatics, medical research, market analysis, marketing research, software development for production and technological processes, organizational and managerial activities.

Our graduates are also in demand in teaching mathematics and informatics.

After obtaining bachelor's degree in mathematics and computer science you can continue learning in magistracy of the Institute of Mathematics and Mechanics as long as of other divisions of Kazan University and other universities.

Specializations within this programme