The annotation of the bachelor's degree program «Fundamentals of research activities in the field of mathematics»

Training direction: 01.03.01 Mathematics
Faculty: Mechanical and mathematical
Training form: Full-time education
Duration of the program: 4 years
Language of education: Russian

Program concept

This program is aimed at training specialists in the field of theoretical mathematics, which are so necessary in various sectors of the economy. The program graduates have a strong mathematical foundation, which will allow to take a worthy place in life. Bachelor graduates usually continue their education in the master's program 01.04.01 "Fundamental Mathematics" (research), "Mathematical Analysis and Modeling" (international with an economic bias), "Teaching Mathematics and Informatics" (pedagogical).

Mission of program

The training of highly qualified personnel who are capable of solving professional tasks in the field of research activities by using methods of theoretical mathematics.
The education of a mathematically literate citizen of their country.

Area of professional activity

1. Research activities in areas using mathematical methods and computer technologies
2. solution of various problems using mathematical modeling processes and objects and software development of effective methods for solving problems of natural science, technology, economics and management
3. software and information support for scientific, research and design activities.

Brief description of the program's content

The most significant disciplines are the following: mathematical analysis, geometry, algebra, discrete mathematics, mathematical logic, computer science, functional analysis, topology.
The State final tests are carried out in the form of defense of the final work.

Program resourses

The training process uses the resources of the training and computing laboratory, consisting of 3 modern computer classes equipped with electronic boards, projectors, powerful computers equipped with the latest licensed software: Microsoft Windows 10 OS, GNU/Linux SLES 10, GNU/Linux CentOS 6; office and publishing packages Microsoft Office 2010, MikTeX 2.9; mathematical packages PTC Mathcad 13.15, Mathematica 8, Maple 15, Matlab R2011b; mathematical and graphic packages data processing Golden Software Grapher, Golden Software Surfer.
At present TSU has a high quality and continuous developing teaching personnel in mathematics, mathematical modeling and computer science. There are a number of recognized authoritative scientific and pedagogical schools, which carry out educational and scientific activities at the world level:

1. School of Mathematical Analysis (Department of Mathematical Analysis and Function theory of Mechanical and mathematical faculty, Candidate of Physical and Mathematical Sciences, Kolesnikov I.S.)
2. School of Algebra (Department of Algebra of Mechanical and mathematical faculty, professor Krylov P.A.)
3. School of Functional Analysis (Department of Mathematical Analysis and Function theory of Mechanical and mathematical faculty, professor Gulko S.P.)
4. School of probabilistic and statistical methods and their applications (Chair of Mathematical Analysis of Mechanical and mathematical faculty, TSU - University of Rouen (France), Federal Professor of Mathematics, professor Pergamenschikov S.M.)
5. School of Engineering Mechanics and Thermal Physics (Department of Theoretical mechanics MMF, prof. Sheremet M.A.)

Prospects for employment, professional and scientific activities

The program graduates have the possibility of employment in partner organizations of the Mechanical and mathematical faculty or to continue education within the framework of training in master's and postgraduate studies:

1. Master's and postgraduate study of TSU
2. Company "SIAM" (Tomsk) - mathematical modeling of transportation problems and oil and gas production
3. Tomsklab LLC (Tomsk) - development of mathematical methods and software for image recognition
4. Research Institute for Monitoring Climatic and Environmental systems (the Tomsk Science Center of Siberian Branch of Russian Academy of Sciences) - development of mathematical models in subject areas
5. Research Institute of Atmospheric Optics (the Tomsk Science Center of Siberian Branch of Russian Academy of Sciences) – development of mathematical models in subject areas
6. Company Econophysica LTD (Tomsk, Moscow, London) – mathematical modeling of financial activity

Admission conditions

Minimal scores: abiturient.tsu.ru/
Entrance tests: abiturient.tsu.ru/
Documents for admission: abiturient.tsu.ru/

Program leader:
Genze Leonid Vladimirovich,
Ph.D. of Phys. and Math. Sciences, Associate Professor,
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Location address:
634050, Russia, Tomsk, Lenin's avenue, Tomsk State University, Mechanical and mathematical faculty, 2-nd learning campus, room 417 (dean's office)
Link to the page of the educational program on the website of the university/faculty/institute:
http://www.math.tsu.ru/node/785