

Protected High Performance Computing Systems

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 rubles per semester**

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PROGRAM DESCRIPTION

The purpose of the program:

The program objective is to train highly qualified bachelors in computer systems and technologies for the staffing of the research institutions, nuclear enterprises and other high-tech industries.

Annotation:

The program provides the formation of competencies in the field of high-performance computing (including using hybrid supercomputer technologies), the development of digital equipment using advanced methods and FPGA design tools. Bachelor's graduates also have competencies in the field of information systems architecture, development of secure system and application software (including for mobile devices) using modern technologies. Much attention is paid to the training of competitive personnel in the interests of informatization of high-tech industries in the context of globalization of the global information space.

The area of professional activity of graduates under the bachelor's program "Secure high-performance computing systems" includes:

- communications, information and communication technologies (in the field of design, development, implementation and operation of computer facilities and information systems, their life cycle management);
- cross-cutting professional activities in industry (in the field of organizing and conducting research and development in the field of computer science and computer technology)
- high-performance computing systems, including protected ones.

Graduates can carry out their professional activities in research institutes of the Russian Academy of Sciences, nuclear and other high-tech industries.

The curriculum of the program combines theoretical training and research work in the framework of educational and production practices, the topics of which are formed based on the scientific interests of the future bachelor, and also takes into account the needs of enterprises in targeted training. The undergraduate program takes into account the requirements of professional standards in the field of communications, information and communication technologies

Актуальность программы:

Specialists with knowledge of the design and operation features of secure high-performance computing systems are more in demand in the labor market than ever. The competencies acquired by graduates of the program in the study

of professional disciplines, as well as in performing research / practice, prepare future bachelors for successful work in all high-tech areas where modern secure information technologies are required. Graduates of NRNU MEPhI traditionally have wide opportunities for professional and career growth in leading companies developing computer systems and research and innovation centers.

Основные дисциплины:

Programming (Object Oriented Programming)	Операционные системы (семейства UNIX)
Theory of Automata	Interfaces and external devices of computer systems
Low level programming	Protection of information
Electrical engineering, electronics and circuitry (circuitry)	Databases (theoretical and practical basis)
Сети и телекоммуникации	Organization of computers and systems
Data science	Microprocessor devices and systems

PROFESSIONAL ACTIVITY

Alumni Competencies:

During training, graduates of the bachelor's program form professionally specialized competencies in the creation and maintenance of secure high-performance computing systems and their software. Graduates of the program are able to design, create, use and operate secure high-performance computing systems, as well as evaluate, control and manage the software development process.

Labor market demand:

Our graduates successfully carry out their professional activities in such well-known organizations, institutions as:

- o MEPhI;
- o at leading enterprises of the state corporation ROSATOM;
- o JSC "MCST";
- o at the leading enterprises of the defense industry complex (OJSC Concern PVO Almaz-Antey, etc.);
- o at leading institutes of the Russian Academy of Sciences

Practice and internships:

As part of the training, students practice and carry out research work at enterprises of the state corporation ROSATOM, in large IT companies, at NRNU MEPhI and at target enterprises and partner enterprises, such as OJSC Concern PVO Almaz-Antey, JSC MCST ".

Specializations within this programme