Micro- and nanoelectronic devices and systems for the physical installations

National Research Nuclear University MEPhI (Moscow Engineering Physics Institute)

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

Language of study: **Russian**
Mode of study: **full-time, part-time**
Duration: **4 years**
Availability of free education: **yes**
Price: **80 860 – 110 900 rubles per semester**

Programme curator: **Vyacheslav S. Pershenkov**
Tel.: **Contact name: Olga N. Petukhova, Phone number. +74957885699, ext. 8045**
E-mail: ONPetukhova@mephi.ru

Goals of the Program

The program goal is to obtain the highest professional profiled education enables graduates to successfully work in activities related to nuclear and radiation physics, nuclear materials and technology, to have a universal and subject-specialized competencies, promote social mobility and stability in the labor market.

Basic department

Micro- and Nanoelectronics (# 27)

Characteristics of the scope and objects of professional activity of future graduates

Area of professional activity: research and development of new principles of operation of micro- and nanoelectronic devices, the creation of methods and means of designing and manufacturing; development of control systems, data acquisition and processing based on modern microprocessors, programmable logic chips, analog devices, optoelectronic and nanoelectronic devices; the development of manufacturing technology of modern micro- and nanoelectronic devices and systems, including the creation of radiation-resistant products and products.

Brief description of the curriculum

In accordance with the standard working curriculum is divided into modules:

- Humanities disciplines module,
- Natural sciences module,
- General professional module,
- Professional module with the disciplines of specialization.

The most labor-intensive disciplines of specialization are: materials for microelectronics; microprocessor-based systems; basics of microelectronics; basics of optoelectronics; technology and design of electronic and microelectronic systems; the design of integrated circuits; microelectronic sensors; microcircuitry.

The base of industrial and/or scientific practice and employment

The list of enterprises for practical training and graduate employment: The All-Russia Research Institute of Automatics (VNIIA), Research Institute of Scientific Instruments (RISI), JSC FCS&HT "SNPO "Eleron", Research Institute for System Studies of RAS, Institute of Space Instrument Making, Research Center "Module", Research Center of computer technology, PLC "MCST" and other Russian scientific centers; Rosatom; RAS institutes.

Specializations within this programme

Objects of the professional activity

Electronic systems of nuclear and physical facilities; automated control system for nuclear physics facilities; advanced materials and technologies of micro- and nanoelectronics; the design of integrated circuits; development of new types of microprocessors and microcontrollers; study of ionizing radiation effects on microelectronic devices.