Elements and devices of computer technology and control systems

National Research Nuclear University MEPhI (Moscow Engineering Physics Institute)

Degree or qualification is awarded: **Researcher. Lecturer-researcher**

Language of study: **Russian, English**
Mode of study: **full-time**
Duration: **4 years**
Availability of free education: **yes**
Price: **155 000 rubles per semester**

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Goal: preparation of highly qualified academic- researcher in the following fields:

- research and design of new operation principles of microelectronic devices, creation of the techniques and means of their design and manufacture;
- research of the properties of microelectronic devices and sensors, organization of their operation in measuring and control systems;
- development of theoretical models for taking into account the effect of ionizing, laser and electromagnetic radiation on electronic equipment;
- development of the systems of control, data acquisition and processing, based on up-to-date microprocessor, programmable logic ICs, analog circuits, optoelectronic and nanoelectronic devices;
- design of new types of ICs, systems on clip, sensor and transducers, nanoelectronic devices and circuits;
- design and manufacture of up-to-date microelectronic devices and circuits including the creation of radiation-hard articles;
- development of asynchronous analog-digital architectures of a new generation of read-out electronics for supermulti-channel radiation detectors.

Basic department: Electronic department(3)

Characteristics of the field and objects of the professional activity of expected graduates: employment in research and design institutions and enterprises of the nuclear, aero-space, radio-electronic industries and adjoining branches in the capacity of specialists-researchers and designers of new type microelectronic devices and systems of various purposes, including the systems, implemented on chip.

Brief characteristics of educational plan schedule:

The combination of a profound theoretical training with necessary practical skills in the research and design of microelectronic devices and systems will ensure high reguestabilitg on the labor market and create the conditions for a fast professional growth.

List of enterprises for practical training: “Dukhov all-Russia RI of Automatics”, “RI of Devices”, “RI Eleron”, “System Research RI of RAS”, “RI of space devices”, “Science and technology center “Modul”, “Research center of computer engineering”, “JSC Research center of computer engineering”, “JSC Russian space systems”.

Specializations within this programme