

Automation and control of technological processes and manufacturing (in industry)

National Research Nuclear University MEPhI (Moscow Engineering Physics Institute)

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

Language of study: **Russian, English**

Mode of study: **full-time**

Duration: **4 years**

Availability of free education: **yes**

Price: **325 000 rubles per year**

Programme curator: **Kishkin Vladimir Lvovitch.**

Tel.: **Contact name: Olga N. Petukhova, Phone number. +74957885699, ext. 8045.**

E-mail: ONPetukhova@mephi.ru

Basic Department: Department of Automation (№ 2).

Aims of the program

The main purpose of training of graduate students is forming their in-depth theoretical knowledge and practical skills in the field: the development and application of modern automation and control technologies for nuclear installations; intelligent control systems technologies; methods of system analysis of complex objects of applied research, information processing, including analysis, simulation, optimization, control and decision-making to improve the efficiency, reliability, quality and safety of nuclear objects and facilities.

Fields of professional activity

The area of professional activity of graduates who have mastered this graduate program, includes areas of science, engineering, technology and pedagogy, encompassing a set of research tasks, creation, implementation and operation of advanced computer systems, networks and systems, mathematical and software of automation and control systems of nuclear installations and facilities, technology of automation and control, modern technologies of intelligent control and human-machine interface.

Objects of professional activity

Automated control systems of nuclear reactors and nuclear-physical facilities and their elements; software and hardware of Automated Process Control Systems (APCS) of NPP; information-measuring systems of nuclear facilities; system of radiation control and monitoring of nuclear facilities and objects; equipment of measuring and control systems, diagnostics, control and protection of nuclear installations; mathematical, informational, technical, linguistic, software, ergonomic, organizational and legal support of automated monitoring and control systems; technology of development, design, manufacture, maintenance, the support of life cycle of software and hardware of control and automation systems of nuclear power plants.

Features of curriculum

The curriculum includes learning of modern theoretical questions, practical exercises, and laboratory workshops on the base of modern and unique equipment, the implementation of research in the form of classroom and in the form of independent work. Central to the training of graduate students engaged in research work, training and protection of final qualifying work and preparation of the master's thesis under the guidance of eminent scientists involved in research projects in the relevant areas of fundamental and applied research, which allows to generate at graduate the ability to work in a scientific team, generate new ideas, as well as to demonstrate the skills of independent research work. In the process of research graduate students acquire skills in searching and analyzing scientific and technical information, learn about actual problems of science and technology, gain setting research tasks skills, performance and protection of research results. Particular attention is paid to training of drawing up surveys, reports and publications, implementation of research results.

The list of enterprises for practical training and employment of graduates

FSUE "VNIIA named N.L. Dukhov ", JSC " NIKIET ", JSC" VNIIAES ", JSC" RASU "MEPhI, RNC named I.V. Kurchatov, JSC "ATOMENERGOPROEKT" and others.

Specializations within this programme