

12.03.01 Instrumentation

Cyber-physical Instrumentation

Program objective

Training of highly qualified specialists in the development and operation of innovative nuclear, cyberphysical and electrophysical devices, facilities and systems that are widely used in nuclear power, oil and gas geophysics, inspection systems, medicine, radiation control.

Partner enterprise: Dukhov Automatics Research Institute

Research and technological areas

- development of nuclear physics devices, electronic systems of nuclear and physical facilities and automated control systems for nuclear and physical facilities
- maintenance, application and operation of nuclear physics and electrophysical facilities in high-tech industries
- development of technologies for the use of devices and facilities for recording radiation, propagation and interaction of radiation with objects of animate and inanimate nature

Alumni competences

- study and analysis of research and technical data
- development and design of electronic components of devices for measuring ionizing radiation and electrophysical facilities
- design of programs and applied software packages for microcontrollers and electronic circuits
- development of technical documentation for devices and facilities
- application of modern radio measuring devices (oscilloscopes, generators, frequency meters, multimeters)
- mathematical modeling of the processes of interaction of nuclear radiation with matter

Practical training and future employment

- Dukhov Automatics Research Institute
- Specialized Research and Production Enterprise “Eleron”
- Specialized Research Institute of Instrumentation\
- Research Institute for Technical Physics and Automation
- Leading Research Institute of Chemical Technology
- All-Russian Scientific Research Institute for Operation of Nuclear Power Plants
- Dollezhal Research and Design Institute of Power Engineering
- National Research Center "Kurchatov Institute"
- Korolev Rocket and Space Corporation “Energia”.