03.03.02 Physics

Medical Physics

Department: "Medical Physics"

Program objective

to train students in medical physics and nuclear medicine, radiation diagnosis and therapy.

Curriculum features

- humanities module (foreign language, history, philosophy, cultural studies)
- natural science module (mathematical analysis, linear algebra, differential and integral equations, general physics, chemistry)
- professional module (medical electronics, human's biology and anatomy, tomographic methods in medicine, fundamentals of imaging, physics of medical imaging, medical equipment and radiation detectors, etc).
- research practical training (obtaining and developing skills on working with modern equipment, using research methods of modern physics to solve practical problems in the field of radiation diagnosis and therapy, radionuclide diagnostics in medicine).

Research areas

- the effect of ionizing radiation on humans and the environment
- mathematical models of theoretical and experimental studies of transport and interaction of radiation with the human tissues and organs
- research, development and technology for obtaining and processing of medical diagnostic images
- design, experimental research and introduction of instruments and methods for nuclear medicine
- automated systems for image processing
- pattern recognition.

Practical training and future employment opportunities

- National Research Centre "Kurchatov Institute"
- Burdenko Institute of Neurosurgery of the Russian Academy of Medical Sciences
- Blokhin National Cancer Research Center of Oncology
- Institute of Emergency Children's Surgery and Traumatology
- Russian Research Centre for Radiology and others.