

**Program:** Radiation safety (14.03.02 Nuclear Physics and Engineering)

**Training Area:** Physical sciences

**Duration:** 4 years

**Program supervisor:** Alla A. Udalova, Doctor of Biological Sciences, Professor of the Department of Nuclear Physics and Engineering

**Basic department:** Nuclear Physics and Engineering, Obninsk Institute of Nuclear Power Engineering

### **Goals of the Program**

The program is established to develop professional human resources in the field of nuclear physics and technology, capable of successfully carrying out professional activities in the field of ensuring the radiation safety of humans and the environment in a wide range of areas of activity, including nuclear power and industry; nuclear medicine; food processing and agriculture; oil and gas, mining, construction industry; radiation safety control and supervision bodies.

**Characteristics of the scope and objects of professional activity of future graduates:** Education in radiation protection is in great demand in today's high-tech society. Specialists of this profile are needed in nuclear energy and industry; nuclear medicine; food industry and agriculture; oil and gas, mining, construction industries; bodies of control and supervision over ensuring radiation safety of humans and the environment.

**Objects of the professional activity:** radiation impact of ionizing radiation on humans and the environment; radiation technologies in medicine; ecological monitoring of the environment; ensuring the safety of nuclear materials, facilities and installations of the nuclear industry and energy.

### **Brief description of the curriculum**

The Program includes an academic and practical training to form knowledge, skills and expertise in basic nuclear engineering with an emphasis on radiation safety of human and the environment. The main courses that provide student training specific for the educational program are: Nuclear physics; Dosimetry and radiation protection; Radiation biology; Nuclear geochemistry; Radioecology; Radioactive waste and spent nuclear fuel; Radiation chemistry; Radiation hygiene; Medical and biological fundamentals of radiation safety; Radiation monitoring; Radiation and environmental safety of nuclear fuel cycle facilities; Nuclear legislation.

The unique advantages of the program:

- professional physical, technical and special training, providing reliable employment
- highly qualified teaching staff, including both full-time professors and world-class specialists from scientific and industrial enterprises in Obninsk and Moscow
- modern laboratories, computer classes, simulators
- involvement of resources of the science city of Obninsk, where a number of enterprises and institutes working in the field of nuclear energy, nuclear medicine, and radiation technologies are located..

### **Areas of research and experts training:**

- nuclear industry and nuclear fuel cycle
- radiological control in nuclear power plants and other enterprises
- supervising administrative bodies in radiation and environmental safety
- agencies / departments of radiation protection and safety
- radiation and environmental safety in non-nuclear industry (oil and gas, mining, construction industry, etc.)
- decommissioning of nuclear and radiation facilities
- radioactive waste and spent nuclear fuel management

### **The base of industrial and/or scientific practice and employment**

Research work of students, practical training and preparation of graduate theses are based both on Resource Center of the University and material, technical and intellectual potential of partner organizations among which

are organizations of the State Corporation Rosatom, Rosenergoatom Concern, research institutes and production enterprises such as Russian Research Institute of Radiology and Agroecology, RPO Typhoon, Karpov Research Institute of Physical Chemistry, Tsyb Medical Radiological Research Center, Leypunsky Institute for Physics and Power Engineering, RPO Doza.