

03.04.02 Physics

Nuclear Medicine

Partner university

Al-Farabi Kazakh State University (Kazakhstan)

1st study year – Al-Farabi Kazakh State University (Kazakhstan)

2nd study year – National Research Nuclear University MEPhI (Moscow Engineering Physics Institute) (Russia)

Program objective

training of general physicists with biological knowledge in modern nuclear medicine and technology, capable of using radionuclides and radiopharmaceuticals for the diagnosis and treatment of diseases.

Key research and professional areas

- research on phantom models with calibration sources, radiation protection equipment of the radiation influence on them
- calculation of radiation doses and exposure for patient and staff radiation safety and monitoring of patients during radionuclide research
- control of physical and technical parameters and operational characteristics of reactors, cyclotrons and equipment for the production of radionuclides and synthesis of radiopharmaceuticals in production laboratories
- control of physical and technical parameters and operating characteristics of gamma cameras, radionuclide tomographs, clinical radiometers
- monitoring of radionuclide diagnostics, outpatient radionuclide therapy

Research in the field of NMR diagnostics, radiation therapy, nuclear medicine, positron emission and single-photon emission tomography is carried out in cooperation with leading medical and research centers.

Curriculum features

- specialized training courses: "Dosimetry in Nuclear Medicine", "Nuclear Diagnostics in Clinics", "Radiation Safety when Working with Sources", "Technology for the Production of Radiopharmaceuticals", "Physics of Radioisotope Medicine"
- research practice to develop skills in working with modern equipment, skills in use of methods in nuclear medicine research.