

14.04.02 Nuclear Physics and Engineering

Particle Physics and Cosmology

Program objectives

- to put knowledge on nuclear and particle physics and cosmology, into practice conducting research aiming at improving experimental techniques used in nuclear and particle physics;
- to prepare and carry out experiments, provide analysis and give interpretation of their results;
- to solve fundamental problems of astrophysics, cosmology and particle physics, connected with the description of the early Universe, dark matter, dark energy, etc.

Two training directions:

- accelerator experiments (e.g., at the Large Hadron Collider) – study for experimental techniques, particle detectors, electronics, and methods of measurements, as well as methods for computer-aided experimental data processing and analysis
- cosmology – study for relativistic quantum mechanics, astrophysics, and cosmology.

Future professional opportunities

- creation and use of particle and radiation detectors
- theoretical predictions and interpretation of experiments in high-energy physics (experiments at accelerators and in astrophysics).