

## **14.03.02 Nuclear Physics and Engineering**

### **Physics of Fundamental Interactions**

#### **Program objectives:**

- possess knowledge in the foundations of experimental nuclear physics, particle and cosmophysics;
- capable of using the knowledge gained in the research work for improving experimental techniques in nuclear physics and cosmic physics;
- prepare and carry out experiments; analyze and interpret their results;
- solve fundamental problems of nuclear and particle physics

#### **Curriculum subject areas:**

- elementary particle accelerators
- nuclear-physics assemblies
- control systems for nuclear-physics assemblies
- ionization radiation affection on the environment
- radiation technologies in medicine
- mathematical models for theoretical and experimental studies in elementary particle physics
- radiation propagation and interaction with matter
- ecological monitoring of the environment
- nuclear safety and security.

Bachelors focus on research activities in the field of experimental nuclear physics and cosmophysics. Alumni may participate in preparation and conduction of various experiments in nuclear physics and space physics (including the design and construction of detectors of elementary particles and radiation), as well as in experimental data processing and analysis. Knowledge gained allows them to participate in theoretical predictions and interpretation of nuclear physics and space experiments (using accelerators in space physics).