

14.03.02 Nuclear Physics and Engineering

Experimental Research and Simulation of Fundamental Interactions

Program objective

To sensitize bachelors about key topics of physics of fundamental interactions.

Program curriculum consists of two parts:

1. basic courses provide for the knowledge of general physics and mathematics;
2. special courses provide for special theoretical and practical knowledge of physics of fundamental interactions of elementary particles and nuclei, as well as mathematical, computer, and electronic technologies for physical experiments.

Curriculum subject areas:

- physics of elementary particles
- nuclear physics
- neutrino physics
- nuclear experimental techniques
- astrophysics and cosmic ray physics
- nuclear matter of extremely high densities and spin physics
- nuclear particle detectors and associated electronics
- data processing methods, computer technologies of the experimental data analysis
- femto-, nano-, and microstructures and applied technologies

Much attention is drawn to space research and mathematical simulations, particularly for experiments at accelerators and colliders.