

## **12.04.04 Biological Systems and Technologies**

### **Functional Nanotechnologies**

#### **Partner university**

Al-Farabi Kazakh State University (Kazakhstan)

1<sup>st</sup> study year – Al-Farabi Kazakh State University (Kazakhstan)

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

#### **Program objective**

Training specialists for the development of new nanomaterials and biomedicine technologies and methods of their use in healthcare for early diagnosis and targeted treatment of socially dangerous diseases

#### **Key research and professional activities**

- biomedical nanotechnology (nanomaterials and devices for photodynamic and sonodynamic therapy, hyperthermia)
- materials science for medicine
- propagation and interaction of laser radiation with human tissues and organs
- biomedical diagnostic images
- experimental research and introduction of materials and methods for biomedicine (materials for creating nanosensors of molecules for biomedical purposes, model objects of living nature for studying nanomaterials and new methods of medical diagnostics and therapy)