**ABSTRACT OF ENGINEER’S EDUCATIONAL PROGRAM   
15.05.01 DESIGN OF TECHNOLOGICAL MACHINES AND COMPLEXES**

**1. Name of educational program**  
Training direction – **15.05.01 Design of technological machines and complexes**Specialization – **Design of machine processing and instrumental complexes in mechanical engineering**Qualification (degree): **engineer**  
  
**2. Brief description of the program**  
**Objective:** training of highly qualified specialists in the field of research and development of engineering processes for nuclear engineering enterprises and other high-tech industries.  
**Department**: Mechanical engineering   
**Duration of study:** 5.5 years (full-time).

The educational program consists of 330 credits. One credit equals to 36 academic hours.  
  
**3. The scope and object characteristics of graduates’ professional activity**

**Graduates’ professional activity area:**  
– professional activity in the scientific, social, economic and productive areas aimed at creation of competitive engineering products based on the application of advanced methods and design means, calculation, mathematical, physical and computer modeling.

**Graduates’ professional activity objects:**– machines and equipment of technological systems of machine-building industry;  
– vacuum and compressor machines, hydraulic machines, electric drives, hydraulic drives and hydraulic pneumatic automation tools;  
– technological equipment, means of mechanization and automation of technological processes in mechanical engineering;   
– industrial technological processes and development, mastering of new technologies;  
– technological systems of operations, technological systems of processes, technological systems of industrial departments, technological systems of the enterprises;  
– means of information, Metrological, diagnostic and management support of technological systems to achieve high quality manufactured products;

– technical documentation, systems of standardization and certification, methods and tools for testing and quality control of engineering products.  
  
  
**4. Basic organization**

Training is realized for the Federal state unitary enterprise "Instrument-making plant" in the framework of the program "personnel training".

**5. Brief description of the curriculum**The curriculum is developed in accordance with Educational Standard NRNU MEPhI for the direction 15.05.01 "Design of technological machines and complexes" (qualification "engineer"). Special attention is paid to the study of the following disciplines: technical mechanics, construction materials technology, materials, technical systems management, mechanical engineering, automation of production processes in mechanical engineering, design engineering production, CAD.  
  
**6. Practice**  
– practical trainings are held for 2 weeks after the 2d and the 4th semesters in the laboratories of the TTI NRNU MEPhI and aimed on forming of primary professional skills;  
– students’ research work is conducted for 4 weeks after the 8th semester in the laboratories of the TTI NRNU MEPhI and is connected with research, mathematical, physical and computer-aided modeling of machines, drives, systems of various complexes in machine-building industry;  
– industrial trainings are held for 2 weeks after the 6th semester and for 4 weeks after 10th semester at the FSUE "Instrument-making plant" and aimed on obtaining and mastering of professional skills in real industrial conditions;

– undergraduate training is held for 14 weeks in the 11th semester at the Federal state unitary enterprise "Instrument-making plant" and is aimed on studying, gathering and analyzing of available documents and information concerning the subject of a graduate’s final qualification work (diploma thesis).