**Master’s Degree Program**

**15.04.01 Mechanical Engineering**

**Field of study:** Equipment and Technology of Welding Production in Power Engineering.

**Program goals**: the formation of competencies that allow a graduate to carry out successfully teaching and production activities, aimed at creating a competitive product of mechanical engineering.

**Duration of training**: full-time form of training - 2 years.

**Basic department**: Mechanical Engineering and Applied Mechanics, VETI NRNU MEPhI.

**Field of professional activity** of Master’s degree program graduates includes teaching activities, as well as areas of science and technology, containing a complex of resources, procedures, techniques and methods of human activity aimed at the creation of competitive products of mechanical engineering and based on:

- application of modern design methods, mathematical, physical and computer modeling of technological processes;

- use of design and technological informatics means and computer-aided design;

- creation of quality management systems in relation to the specific conditions of production on the international standards basis;

- marketing research for seeking optimal solutions to create products [with due regard to](http://www.multitran.ru/c/m.exe?t=6248403_1_2&s1=%F1%20%F3%F7%B8%F2%EE%EC%20%F2%F0%E5%E1%EE%E2%E0%ED%E8%E9%20%E1%E5%E7%EE%EF%E0%F1%ED%EE%F1%F2%E8) quality, reliability and cost requirements, as well as production time, [vital activity security](http://www.multitran.ru/c/m.exe?t=4934019_1_2&s1=%E1%E5%E7%EE%EF%E0%F1%ED%EE%F1%F2%FC%20%E6%E8%E7%ED%E5%E4%E5%FF%F2%E5%EB%FC%ED%EE%F1%F2%E8) and environmental friendliness.

**Objects of professional activity** of Master’s degree program graduates are:

- mechanical engineering production facilities, technological and tool equipment;

- technological equipment and mechanization and automation means of technological processes in mechanical engineering;

- manufacturing processes, their development and mastering new technologies;

- information, metrology, diagnostic and management software means of technological systems to achieve the quality of products;

 - normative and technical documentation, standardization and certification systems, methods and means of tests and quality control of mechanical engineering products.

**Curriculum features:** the curriculum includes disciplines, which guarantee a graduate the successful development of all the necessary competences for teaching activity and qualified solution of modern engineering problems, aimed at creating competitive products in the manufacturing process. The basic disciplines that ensure student profiling in accordance with this educational program are: "Modern Power Supply Systems for Welding in Power Engineering", "Automation of Welding Processes in Power Engineering", "Residual Stresses and Deformations in Welding", "Design of Assembly and Welding Fixtures in Power Engineering", "Welding of Special Steels and Alloys in Power Engineering", "Welding Technology in Power Engineering" and others.

**The list of enterprises for practical training and employment of graduates:** “Atommash” the branch of JSC “AEM Technologies” (Volgodonsk), JSC "Atomenergomash", Federal State Unitary Enterprise "Russian Federal Nuclear Center, All-Russian Scientific Research Institute of experimental physics" (FSUE “RFNC-ASRIEPh”), JSC «Concern Rosenergoatom» “Rostov nuclear power plant", JSC "Volgodonsk plant of metallurgical and power equipment" (VPMPE Ltd.), LLC "Polesie", LLC (Special Design and Technology Bureau) SDTB "Energomash", JSC "Atommashexport".