**Bachelor’s Degree Program**

**13.03.01 Heat Power and Heat Engineering**

**Field of study**: Automation of Technological Processes and Production in the Energy Industry.

**Program goals:** training of bachelors, with general and professional competencies that enable them to operate successfully in the areas related to research, development and implementation of diagnostic systems and automated process control in heat power and heat engineering, promote social mobility and stability in the labor market.

**Duration of training:** Full-time form of training - 4 years, correspondence training - 5 years.

**Basic department**: Information and Control Systems, **VETI NRNU MEPhI**.

**Field of professional activity:** installation and commissioning, operation and maintenance, repair and modernization for heat production, its use, its management flows and transformation of other types of energy into heat.

**Objects of professional activity:** thermal and nuclear power plants, power supply systems of industrial and municipal enterprises, small power generation facilities; plants, systems and complexes of high-and low-temperature heat technologies; steam and hot water boilers for different purposes; reactors and steam generators of nuclear power plants; steam and gas turbines, gas-fired engines (engines of internal and external combustion engines); power units and combined-cycle gas turbine plants; installations for the production of compressed and liquefied gases; compressor, refrigeration units; installation of air conditioning systems; heat pumps; chemical reactors, fuel cells, electrochemical power plant; installation of hydrogen energy; auxiliary heat equipment; heat and mass transfer devices for different purposes; thermal and electrical network; themo and electrical equipment industries; installation of air conditioning coolants and working bodies; process liquids, gases and vapors, melts, solids and granular bodies as coolants and working bodies of power and thermal technological systems; fuel and oil; specifications and technical documentation and standardization systems; diagnostic systems and automated process control in power and thermal engineering.

**Curriculum features:** the curriculum takes into account the needs of the labor market and employers. To this end, the curriculum includes courses such as Electrical and Electronics, Engineering Measurement, Automation of Thermal Processes, Automatic Control Theory, Simulation Systems, NPP Automation, Microcontrollers in Automation Systems, Integrated Design and Management Systems, Actuators of Automated Process Management Systems of Electric Power Plants Technological Processes, Diagnostics and Reliability of Automated Systems, Design of Automated Systems and others. Carrying out all types of laboratory work and practical training is provided by modern material and technical base.

**The list of enterprises for practical training and graduate employment:** JSC "Concern Rosenergoatom" "Rostov Nuclear Power Plant", JSC "Concern Rosenergoatom" "Rostov nuclear power plant," Rostov branch "Rostovatomtekhenergo" JSC "Atomtekhenergo", “Volgodonsk Interdistrict Electric Networks” the branch of JSC “Donenergo” (VIEN), LLC "LUKOIL-Rostovenergo", LLC "LUKOIL-Ekoenergo”, “Donenergomontazh” the branch of CJSC “Sezam”, Municipal unitary enterprise "Volgodonsk city electric network" (MUE VCEN), “Atommash” the branch of JSC “AEM Technologies” (Volgodonsk), JSC "Concern Rosenergoatom" "Leningrad NPP", JSC "Concern Rosenergoatom" "Smolensk NPP", JSC "Concern Rosenergoatom" "Kalinin NPP ", JSC "Concern Rosenergoatom» «Novovoronezh NPP", JSC "Concern Rosenergoatom" "Kursk NPP ", JSC "NIAEP", LLC "EnergomashKapital