**Bachelor degree program abstract in the field of training**

**13.03.01 Heat Power Engineering and Heat Engineering**

*1. Code and name of the field of training, name of the program.*

13.03.01 Heat Power Engineering and Heat Engineering, specificity«Industrial heat power engineering».

*2. Program educational objectives*: to develop students ' general cultural, general professional and professional competences in accordance with the requirements of the educational standard of higher education, independently defined by NRNU MEPhI in the given direction of bachelors` training.

Forms and terms of education: full - time- training period - 4 years.  
 Entrance examinations – Mathematics, Physics, Russian.

*3.* *The characteristic of professional activity* *of the GEP of undergraduate:*  
 **The area of professional activity of undergraduates includes:** research, designing, construction, and operation of technical facilities for the production of heat, its utilizing, management of its streams and converting other types of energy into heat.  
 **The objects of professional activity of undergraduates are:** thermal and nuclear power plants; power supply systems of industrial and municipal enterprises; small-scale power objects; installations, systems and complexes of high-temperature and low-temperature heat technologies; steam and hot water boilers for different purposes; the reactors and steam generators of nuclear power plants; steam and gas turbines, gas engines (the engines internal and external combustion); power units, combined-cycle and gas-turbine installations; installations for the production of compressed and liquefied gases; compressor, refrigeration systems; installation of air conditioning systems; heat pumps; chemical reactors, fuel cells, electrochemical energy installations; installation of hydrogen energy; auxiliary heating equipment; heat and mass transfer devices for different purposes; thermal and electric networks; electric and heat engineering equipment of industrial enterprises; conditioning of coolants and working substances installations; technological liquids, gases and vapors, melts and solid and bulk bodies as heat transfer fluids and working bodies of energy and heat engineering installations; fuel and oil; normative-technical documentation and standardization systems; system of diagnosis and automated control of technological processes in heat power engineering and heat engineering.  
 **Types of professional activity**: calculation and design; research; organizational management; industrial technology and innovation; installation and commissioning; service and operation.  
 **Undergraduate profession**: engineer; engineer of energy-saving technologies; supervision specialist; expert in operation and repair of equipment of nuclear and heat power stations.  
 **Employment**: power plants of various types; companies distributing and metering energy; energy specialists in non-core companies; design departments and institutes.  
 Minimum exam marks for a competitive group: Mathematics – 38, Physics – 40; Russian – 38.