Division: *Institute of Engineering and Technology*

Academic programme: *13.03.02 Power Engineering and Electrical Engineering, major in Electric Power Systems with Integrated Relay Protection and Automation*

Mode of study: *full-time, part-time*

Programme length: *4 years*

Programme level: *Bachelor's degree*

Language of instruction: *Russian*

Programme description: *Holders of a Bachelor's degree in Electric Power Systems with Integrated Relay Protection and Automation is in command of the knowledge of the processes of transmission, conversion and distribution of electricity, normal and emergency modes of operation of of the main power electrical equipment of electric power plants and substations, design and principles of operation of microprocessor-based relay protection and automation devices, as well as the structure and functions of a computer-aided control system for technological processes in high-voltage electric power substations.*

Graduates of this Bachelor's degree programme can work at power plants, high-voltage electric power substations, and electrical power systems and networks. In the process of training, students obtain the skills and experience of calculating and analysing the modes of electrical power systems and grids, designing electric power substations, calculating and selecting the main power and switching equipment, as well as programming and adjusting microprocessor-based relay protection and automation devices.

To complete the training, students develop and defend their diploma projects, in which they design a high-voltage step-down substation for the purpose of connecting a new consumer to a power supply network.

Main programme-specific classes:

- *Transient Processes*
- *Electric Power Plants and Substations*
- *Electric Equipment of High-voltage Substations*
- *Fundamentals of Designing Electric Power Plants and Substations*
- *Coordination of Electric Equipment Insulation*

- *Electrical Power Systems and Grids*
- *Operation of Electrical Power Grids*
- *Transmission and Distribution of Electricity*
- *Reliability of Electrical Power Systems*
- *Engineering and Designing of Electrical Power Systems*
- *Elements of Microprocessor-based Systems*
- *Theory of Relay Protection and Automation*
- *Integrated Relay Protection and Automation of Electrical Power Systems*
- *Software Tools in Power Engineering*
- *Automation of Electrical Power Systems*
- *Fundamentals of Programming Logic for Relay Protection and Automation*
- *Fundamentals of Designing Relay Protection of Digital Substations*
- *Mathematical Problems of Power Engineering*
- *High-voltage Engineering*
- *Methods of Optimization and Decision Making*
- *Power Electronics*
- *Power Engineering Systems with Elements of Power Electronics*

Programme manager: *K.E. Gorshkov, Candidate of Sciences (Engineering), Associate Professor*