Power Engineering

South Ural State University

Degree or qualification is awarded: **Master's degree**

Language of study: **Russian**
Mode of study: **full-time**
Duration: **2 years**
Availability of free education: **yes**
Price: **161 600 rubles**

Programme webpage at the university website:
https://www.susu.ru/en/education/masters-degree-programs/130402-power-engineering-and-electrical-engineering-electrical

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A professional in the field of electricity can perform industrial and organizational work, to engage in scientific and engineering activities, works with various types of electrical equipment, electrical instrumentation, devices, tools and technical documentation.

In addition students complete the program through practices, get a profession, qualification category, specialty and group tolerance for working in electrical installations.

Students are able to conduct research, analyze and summarize the results using modern computer technology, to participate in the creation of electrical installations, conduct installation, testing and commissioning, as well as participate in teaching activities, in the training of the corresponding profile.

Master's degree will allow you to achieve career growth in institutions of the corresponding profile, and thus will give the opportunity to take the following professional positions: leading specialists of profile organizations and enterprises; chief designer, chief technologist; chief power engineer; chief engineer; heads of relevant organizations and enterprises, as well as, in the future, managers and employees of relevant Ministries and agencies. The graduate diploma gives the right to conduct educational activities in higher and secondary educational institutions.

Specializations within this programme

Actuators and control system actuators

Power Engineering and Electrical Engineering (Intelligent Electric Power Systems and Networks)

Master’s degree student in the field of intelligent electric power systems and networks has the knowledge to ensure their effective and reliable operation in modern conditions.

Power systems are the most complex technical systems created by man. They unite almost all electrical installations in Russia and a number of foreign countries participating in the production, transmission and distribution of electricity in a single operation mode. For making operational and managerial decisions in such a system, we need in-depth knowledge in the fields of normal and emergency modes, digital relay protection and automation devices, intelligent control, the ability to analyze the operating modes of electric power systems and to optimize them.

Classes under the programme are held in the laboratories of relay protection and automation, physical and mathematical modelling of power systems, dispatch control, power systems with power converting equipment. In the process of training, students obtain knowledge focused on information technology, the introduction of intelligent control, the use of modern and promising systems of transmission and distribution of electricity. Special attention is

paid to in-depth training in professional development courses taught by specialists from leading enterprises in the electric power industry, as well as to participation in the scientific activities of the Department together with its teachers and postgraduates.

Power Engineering and Electrical Engineering (Optimization of Developing Power Supply Systems)

Power Engineering and Electrical Engineering (Electric Drives and Control Systems)

Training of highly qualified holders of a Master's degree in the field of automated electric drives capable of competing in the conditions of a modern market economy and digitalization of production.

Programme objectives:

- development and analysis of generalized solutions to problems in the field of automated electric drives and control systems;
- analysis and synthesis of objects of professional activity: development of plans and programs for research, creation of mathematical models of electric drives and complex technological complexes;
- planning of the implementation of projects in the field of electric drives and automation, with a further assessment of the technical and economic efficiency of the decisions made;
- assessment of the production and non-production costs for ensuring product quality, marketing and preparation of business plans for the production and sale of promising and competitive products;
- evaluation of energy efficiency of technological processes, innovation and technological risks in the implementation of new equipment and technologies.