1. Educational goals

Electrical engineering training is traditional for all prestigious, higher technical schools in the world. It provides a broad base of theoretical knowledge and practical skills needed for the conversion and use of electric power and related facilities in all areas of modern life. The specialty "Electrical Engineering" for Master's degree has a predominant practical orientation, as the curriculum is prepared in accordance with the requirements for providing the labor market with quality trained professionals. The training in the specialty builds on the one acquired in the bachelor's training in the specialty "Electrical Engineering" and includes specialized subjects for the production, transmission and use of electric power. The specialized subjects are related to the design, manufacture and operation of various electrical equipment, such as generators and transformers in power plants, transformers in substations, electrical machines and apparatus for high and low voltage, etc. The continuous improvement of these devices guarantees efficient, reliable and environmentally friendly energy conversion. The practical orientation of the training is related to the preparation of course projects and tasks in compulsory and optional subjects. During the last semester students prepare and defend a Master's Thesis. The graduates of the specialty "Electrical Engineering" receive a diploma of Master of Engineering in the specialty "Electrical Engineering".

2. Knowledge and skills necessary for successful professional activity

The qualification of the Master of Engineering in "Electrical Engineering" specialty provides the necessary preparation for participation in the management and leadership of activities related to construction, design, research (study), analysis and assessment of the condition (expert activity), engineering activity, development and innovation policy, production, testing, quality assessment and certification, installation, starting and fine-tuning, operation, service maintenance and repair, entrepreneurship (management), training and qualification in the field of theoretical and applied electrical engineering, electrical and electrotechnological systems and equipment (electrical machines, electrical apparatus, electric drives, complete switchgear and units, electrotechnological machines, apparatus and systems, household, transport, mining and other equipment and systems), manufacture and production lines in industry, agriculture, construction and transport, robotics, mechatronics, computing, information, security, communication and lighting systems using electrical devices and systems, including the use of renewable sources.

The Master of Engineering in "Electrical Engineering" specialty is prepared to take all initial management and engineering positions requiring higher education in this specialty in the public and private sector, in enterprises and organizations, such as: research, project, design technology departments, engineering offices, laboratories, consulting and trading companies, enterprises and companies in the field of power engineering, construction, chemical, food, biotechnology, textile industry, transport and agriculture, urban planning and ecology.

3. General theoretical training

The electrical engineer majoring in "Electrical Engineering", higher education, educational qualification degree "Master", knows in a sufficient amount with applied orientation basic natural and engineering sciences such as: mathematics, physics, chemistry, technical mechanics, machine elements and mechanisms, materials science, technical documentation, programming and use of computer equipment, safety engineering, etc., which forms his/her basic and general technical training.

The Master of Engineering in the specialty "Electrical Engineering" must know a sufficient amount of electrical engineering, electrical (including new generations of insulation and construction) materials, electrical measurements, electronics, power engineering, converters engineering, digital and microprocessor engineering, telecommunications, etc., which forms his/her fundamental and theoretical training.

4. Special training

The electrical engineer with a specialty "Electrical Engineering", higher education, educational qualification degree "Master" must know the theory and design of electrical machines and their use; the theory and design of electrical apparatus and their use; design and construction (including using computer methods) of electrical machines, electrical apparatus and other types of electrical, electromechanical, mechatronic systems and equipment; testing, diagnostics, reliability of electrical machines, apparatus, equipment and installations; modes of their operation; joint operation of electrical machines and apparatus with electronic, hydraulic and pneumatic devices; electrotechnological devices and processes, electrothermy, household electrical engineering, lighting and installation equipment, renewable energy sources, which forms his/her special training.