

NTU "KhPI" INFRASTRUCTURE

The main part of NTU "KhPI" is located in the campus, in which there are about 30 buildings with well-equipped classrooms, laboratories and computer classes, one of the best libraries in Ukraine, dining room, cupboards, and other infrastructure facilities.

Not far from the school campus comfortable dormitories are located.

In his spare time, students have the opportunity to practice different sports in one of the best in Ukraine, sports complex with 50-meter swimming pool, indoor track and field arena, specialized facilities, etc.

In the Palace of students there are numerous clubs and groups, in which students develop their creative abilities.



DEPARTMENT OF ELECTRICAL APPARATUS

LEVELS OF HIGHER EDUCATION, FIELDS OF STUDY

The Department provides education in three levels of higher education:

- Bachelor – 4 years;
- Master – Bachelor + 1.4 year or 1.9 year;
- Doctor of Philosophy (PhD) – Master + 4 years.

Specialisations (Fields of study):

- Electrical Apparatus (switchgear, controlgear, fuses, assemblies of such devices, etc.);
- Electrical Home Appliances (heating, conditioning, cooking, etc.).

Head of Department: Prof. Dr.-Eng.
Borys V. Klymenko



DEPARTMENT OF ELECTRICAL APPARATUS MODERN EDUCATIONAL EQUIPMENT

In 2016 Department received a grant from the Alexander von Humboldt Foundation (Germany) for the purchase of scientific equipment in the amount of 20 000 Euros.

Thanks to the funding from the Foundation the Department acquired numerous examples of modern electrical devices (electromechanical and semiconductor switching, control and protection devices of the production of leading European companies, such as ABB, Legrand, GE, etc.), examples of modern measuring techniques (digital oscilloscopes, the imager, sound meter, fluxmeter, multimeters, etc.), examples of innovative technological equipment and Appliances (one of the first in NTU "KhPI" 3D printer, induction cooker, etc.).

Purchased equipment is used for radical modernization of scientific and educational laboratories of the Department for the purpose of educational process and scientific research on a level with the highest world standards



DEPARTMENT OF ELECTRICAL APPARATUS PROFESSIONAL EDUCATION

**KEY DISCIPLINE THAT STUDENTS STUDY
ON BACHELOR LEVEL OF HIGHER EDUCATION
(SPECIALIZATION "ELECTRICAL APPARATUS"):**

Informatics

Information technologies

Technical mechanics

Mechanical engineering technology

Computer aided design

Theoretical foundations of electrical engineering

Theory of electromagnetic field

Electrical engineering materials

Fundamentals of metrology and electrical measurements

Electric machines

Foundations of electronics

Fundamentals of electric drive

Fundamentals of electric power industry

Electromagnetic and induction-dynamic devices

Electromechanical switching devices and assemblies

Semiconductor switching devices and automation elements

Contact-arcing systems and thermal processes in electrical apparatus

Microprocessors and microcontrollers

Microcontroller programming

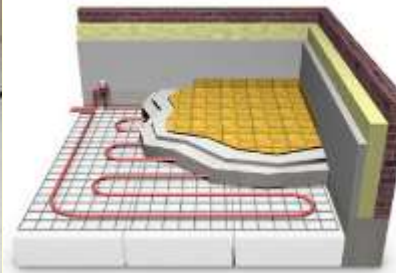
Microprocessor devices



DEPARTMENT OF ELECTRICAL APPARATUS PROFESSIONAL EDUCATION

**KEY DISCIPLINE THAT STUDENTS STUDY
ON BACHELOR LEVEL OF HIGHER EDUCATION
(SPECIALIZATION "ELECTRICAL HOME APPLIANCES"):**

**Informatics
Information technologies
Technical mechanics
Mechanical engineering technology
Computer aided design
Theoretical foundations of electrical engineering
Theory of electromagnetic field
Electrical engineering materials
Fundamentals of metrology and electrical measurements
Electric machines
Foundations of electronics
Fundamentals of electric drive
Fundamentals of electric power industry
Fundamentals of electrical home appliances
Electrical apparatus
Household electromechanical apparatus
Electric power supply of civil constructions
Electrical home appliances
Automation elements in electrical home appliances
Servicing and repairs of electrical home appliances
Microprocessors and microcontrollers
Microcontroller programming
Microprocessor devices**



DEPARTMENT OF ELECTRICAL APPARATUS PROFESSIONAL EDUCATION

**KEY DISCIPLINE THAT STUDENTS STUDY
ON MASTER LEVEL OF HIGHER EDUCATION
(SPECIALIZATION "ELECTRICAL APPARATUS"):**

Methods of mathematical and computer modeling

Fundamentals of scientific research

Microprocessor devices in electrical apparatus

Certification and accreditation of electrical apparatus

Information technologies and software packages in computer aided design

Current state and prospects of development of electrical apparatus

Resource saving and ecologically safe technologies

Production technology of electrical apparatus

Information technologies in production of electrical apparatus

Hybrid switching devices

Design of electrical apparatus

Reliability and diagnostics of electrical apparatus

Novel methods of information search and processing



DEPARTMENT OF ELECTRICAL APPARATUS PROFESSIONAL EDUCATION

**KEY DISCIPLINE THAT STUDENTS STUDY
ON MASTER LEVEL OF HIGHER EDUCATION
(SPECIALIZATION "ELECTRICAL HOME APPLIANCES"):**

Methods of mathematical and computer modeling

Fundamentals of scientific research

Electronic and microprocessor devices in electrical home appliances

Testing, certification and accreditation of electrical home appliances

Information technologies and software packages in computer aided design

Current state and prospects of development of electrical home appliances

Automatic control systems of electrical home appliances

Methods of investigations and testing of electrical home appliances

Resource saving and ecologically safe technologies

Production technology of electrical home appliances

Design of electrical home appliances

Reliability and diagnostics of electrical home appliances

Novel methods of information search and processing



DEPARTMENT OF ELECTRICAL APPARATUS COMPUTER TRAINING

In addition to professional education, our students:

- Prepared programming skills and calculations using mathematical packages Matlab, Simulink, Maple, FEMM, Electronic Workbench;
- Studying the design and construction packages AutoCAD modeling software, 3D Compass;
- Learn microcontrollers and programming and the development of microprocessor-based devices;
- Get in-depth knowledge of operating systems Windows, Linux;
- Learn to develop their own websites and presentations of ABBYY, Adobe, Power Point;
- Learn how to work with Access databases and receive Internet application skills.



DEPARTMENT OF ELECTRICAL APPARATUS RESEARCH AND INTERNATIONAL RELATIONS

The main scientific activities of the department are:
development of advanced designs of LV and MV vacuum switching devices with polarized electromagnetic actuators;
study of electromagnetic and thermal processes in induction heating for industrial and household purpose systems.

Along these lines, the Department actively cooperates with domestic manufacturing enterprises ("AVM Ampere" - Kremenchug, "Electrodynamics" - Kharkiv). Since 1998, the Department holds an annual International Symposium "Problems of power engineering, electrical engineering and electromechanics" (SIEMA).

The Department collaborates with the offices of Europe's leading electrical engineering companies. It has become a tradition to hold workshops at the symposium of these companies, which presented their latest developments.

Inter-institutional agreement in the framework of Erasmus+ between National Technical University "KhPI" and the Polytechnic School of the University of Nantes (France) for 2019-2020 is prepared.



GRADUATES EMPLOYMENT PERSPECTIVE

Graduates are employed in manufacturing plants, project organizations, research institutes of electrical engineering, energy, and urban electric transport, as well as in private companies, specializing in the development, production and sale of modern electrical equipment and appliances.



CONTACTS

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