NATIONAL TECHNICAL UNIVERSITY
"KHARKIV POLYTECHNIC INSTITUTE"

INSTITUTE OF EDUCATION AND SCIENCE IN POWER ENGINEERING, ELECTRONICS AND ELECTROMECHANICS (IES PEEE)

SPECIALTY

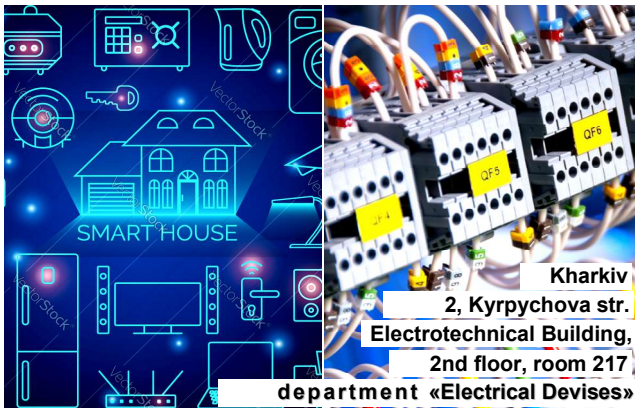
G3 ELECTRICAL ENGINEERING

ADMISSION OFFER

«ELECTROMECHANICS»

DEPARTMENT «ELECTRICAL DEVISES»

OUR TWO SPECIALIZATIONS:
«ELECTRICAL DEVISES»
«HOUSEHOLD ELECTRICAL APPLIANCES»



KHARKIV

The Department of **Electrical Devises** offers training in the specialty **G3 Electrical Engineering** (the competitive offer and the educational program have the same title – **Electromechanics**) in two specializations:

1) Electrical Devises
2) Household Electrical Appliances

Admission to the Bachelor's Degree Program:

1) Based on Complete General Secondary Education (after 11 years of schooling). Duration – 3 years 10 months. Modes of study – full-time, part-time.

2) Based on NQF Level 5 (after college or technical school). Duration – 2 years 10 months (accelerated form). Mode of study – full-time.

Types of funding – state-funded, contract-based.

For detailed information about admission requirements, document submission procedure and deadlines, NMT subject list, tuition fees, or any other questions related to the admission process, please contact the Admission Office at **+38 (067) 973-54-79**.

NMT Competitive Subjects.

Mandatory Block:

1) **Ukrainian Language** (weight coefficient – 0.3);
2) **Mathematics** (0.5);
3) **History of Ukraine** (0.2).

Additional Block (optional):

Physics (0.5); **Foreign Language** (0.3); **Chemistry** (0.3); **Ukrainian Literature, Geography, Biology** (0.2).

Ваш конкурсний бал (КБ) буде помножуватись на додаткові коефіцієнти РК та ГК: **Your Competitive Score (CS)** will be multiplied by additional **RC** and **IC** coefficients:

- **Regional Coefficient (RC)** = 1.07 (for Kharkiv)
- **Industry Coefficient (IC)** = 1.02 (for applications with priority 1 or 2)**.**

***Bonus:** up to +10 additional points to the CS for preparatory courses, as well as a high probability of transfer from contract to state-funded places during enrollment.

Core Courses Studied:

- **Computer Science, Information Technology, and Computing (fundamentals and programming);**
- **Electronics and Microcircuit Technology;**
- **Microprocessor Control of Industrial and Household Devices;**
- **Higher Mathematics, Physics;**
- **Theoretical Fundamentals of Electrical Engineering;**
- **CAD (Computer 3D Graphics);**
- **Electrical Apparatus and Complete Devices;**
- **Household Electrical Appliances, Maintenance, and Repair;**
- **Power Supply for Industrial Enterprises.**

Training is available on both state-funded and contract bases: **Military training is provided.**

Electrical Devises – a vast group of electrotechnical devices designed for:

- distributing electrical energy among consumers;
- controlling electrical receivers;
- protecting electrical networks and equipment from overcurrents and overvoltages in inadmissible or emergency operating modes;
- protecting people, property, and the environment from the harmful effects of electrical energy;
- changing, regulating, measuring, and monitoring electrical and non-electrical parameters of various devices, machines, and mechanisms during the production, transmission, conversion, distribution, and consumption of electrical energy.

Household Electrical Appliances – electrotechnical devices used in everyday life to facilitate household tasks and provide comfort in daily living. These include:

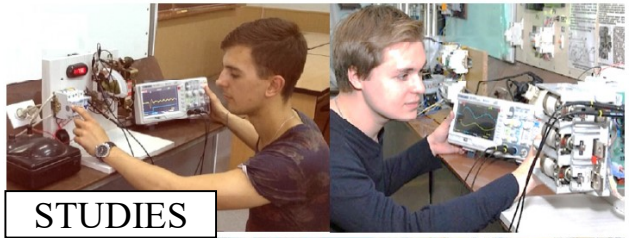
- kitchen appliances for cooking, mechanical processing, and storing food;
- climate control equipment;
- smart home systems;
- household automation devices.

Graduates find employment at leading enterprises in Ukraine, in both state-owned and private companies specializing in the development, production, and sales of modern electrical equipment, as well as in the servicing, repair, and sales of household electrical appliances.

Our graduates' employers include:

- **JSC "Ukrainian Energy Machines"**
- **SE "NNEGC Energoatom"**
- **LLC "AVM Amper"**
- **ASKO UKREM Corporation**
- **ENEXT Ukraine**
- **STC "Kharkivrelekomplekt"**
- **LLC "Euroindustry"**
- **PJSC "Kharkiv Metroproekt"**
- **KP "Kharkiv Metro"**
- **R&D Enterprise "Electrodynamics"**
- **SE "Southern Railway"**
- **JSC "Kharkivoblenergo"**
- **LLC "Electropivdenatommontazh"**
- **JSC "Hartron"** and others.

The department cooperates with **European** universities – Wuppertal (Germany), Nantes (France), and Graz (Austria). The best students have the opportunity to undertake internships abroad. Academic exchange programs **Erasmus+** and **DSG2** double degree programs are available.



STUDIES

RESEARCH ACTIVITIES

INTERNSHIP

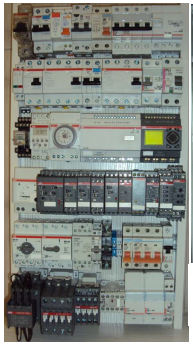
The specializations "**Electrical Devises**" and "**Household Electrical Appliances**" are related to the design, development, research, production, operation, marketing, maintenance, and repair of modern electrical equipment and household appliances using computer and information technologies.

Students acquire **practical skills** in operation, organization, and management, engineering-economic and commercial activities, as well as in research work. They study computer modeling and computer graphics, computer-aided design (CAD) systems, methods for energy saving, and automated process control systems using modern microcontrollers in industrial production, energy systems for transport, the municipal sector, and household applications.

In 2016, the Department received a grant from the **Alexander von Humboldt (AvH)** Foundation for the purchase of educational and research equipment in the amount of **€20,000!**

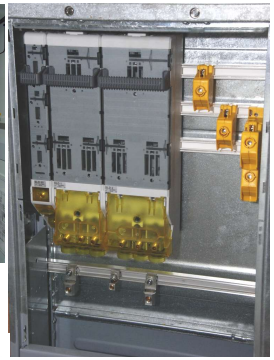
Thanks to this grant, the department acquired **innovative equipment, including electromechanical and semiconductor switching, control, and protection devices, as well as modern measuring and technological instruments**.

The new equipment not only enhances the quality of education but also enables the department to conduct research at a world-class level.



AUTOMATION AND PROTECTION DEVICES

AUTOMATIC TRANSFER SWITCH (ATS)



KABELDON DISTRIBUTION SYSTEM

DIGITAL OSCILLOSCOPE

SOFT STARTER FOR ELECTRIC MOTORS

THERMAL IMAGER

PYROMETER

3D PRINTER

Some samples of modern electrical equipment, as well as technological and measuring instruments, acquired by the department with funding from the AvH grant

The department also includes:

- **Training laboratories** for modern electrical apparatus, microprocessor, and household electrical appliances;
- **A computing center** equipped with modern computers and LED monitors;
- **A local network** with free unlimited Internet access and Wi-Fi.

Our students:

- Gain skills in independent programming and calculations using modern mathematical and simulation software packages:

MATLAB, COMSOL, Simulink, MAPLE, MATHCAD, FEMM, STM32CubeMX, Keil uVision

- Deeply study design and engineering software for 2D and 3D modeling with the use of the modern 3D printer FLASHFORGE CREATOR PRO+

AUTOCAD, КОМПАС 3D, SOLIDWORKS

- Learn modern microcontrollers, their programming, and development of microprocessor devices, single-board computers, and microprocessor systems

SINGLE-CRYSTALLIZED COMPUTERS, MICRO-CONTROLLERS, MICROPROCESSOR SYSTEMS

- Acquire basic knowledge in administration of local computer networks and advanced understanding of operating systems;
- Develop practical skills in data processing and creation of graphic objects using modern application software;
- Gain basic skills in web design and create their own websites;
- Study general programming principles and the basics of database creation and programming.

The specializations **"Electrical Devices"** and **"Household Electrical Appliances"** are among the most in-demand and promising, as modern electrical apparatus and household appliances represent a highly dynamic industry and a rapidly evolving market that constantly requires highly qualified specialists.

QR Code for the detailed presentation of our department on **YouTube:**

Dear Applicants!
We warmly invite you to join our programs in **"Electrical Devices"** and **"Household Electrical Appliances"**! You won't regret it!!!

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