

**National Technical University  
«Kharkiv Psolytechnic Institute»**

**«Institute of Education and Science in  
Engineering and Physics»**

***Department of Radio Electronics***





**Speciality:**

**105 «Applied Physics and Nanomaterials»**

**Specialization:**

**105-01 «Engineering of Radio Electronic Systems»**

**Education qualification levels:**

- ✓ **Bachelor of Applied Physics  
(4 years);**
- ✓ **Master of Applied Physics and  
Nanomaterials (21 months);**
- ✓ **Doctor of Philosophy in speciality  
104 «Physics and astronomy»  
(4 years).**





# The main areas of specialists training

- ✓ development of radio engineering and radiophysical equipment;
- ✓ maintenance of complex radio engineering systems;
- ✓ design and maintenance of antenna-feeder systems;
- ✓ development and maintenance of complex electronic systems;
- ✓ maintenance of computer and computerized automatic control systems;
- ✓ development and maintenance of electronic power systems;
- ✓ space environment research.

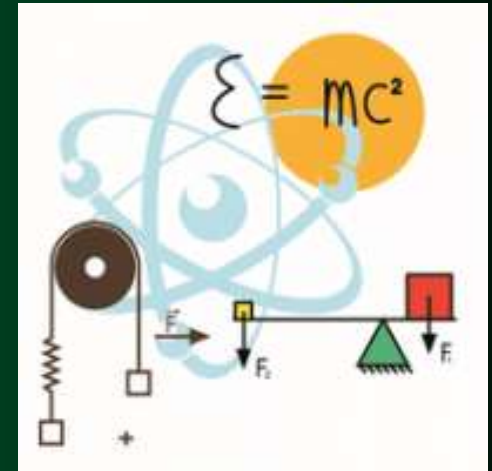




# BASIC DISCIPLINES THAT STUDENTS LEARN

## *FUNDAMENTAL DISCIPLINES:*

- ✓ Higher Mathematics ;
- ✓ Physics;
- ✓ Theory of Electromagnetic Circuits;
- ✓ Methods of Mathematical Physics;
- ✓ Electrodynamics;
- ✓ Theory of Radio Circuits.





# BASIC DISCIPLINES THAT STUDENTS LEARN

## SPECIAL DISCIPLINES:

- ✔ Semiconductor and Optical Electronics
- ✔ Digital Electronics
- ✔ Radio Circuits and Signals
- ✔ Signal Processing Techniques and Systems
- ✔ Signal receiving devices
- ✔ Signal generating devices
- ✔ Antennas and VHF devices
- ✔ Fundamentals of Information Theory
- ✔ Computer Design of Radio Electronic Systems
- ✔ Radio Physics of Geospace
- ✔ Basics of Programming
- ✔ Electronic Database
- ✔ Computer Modeling
- ✔ Microprocessor systems

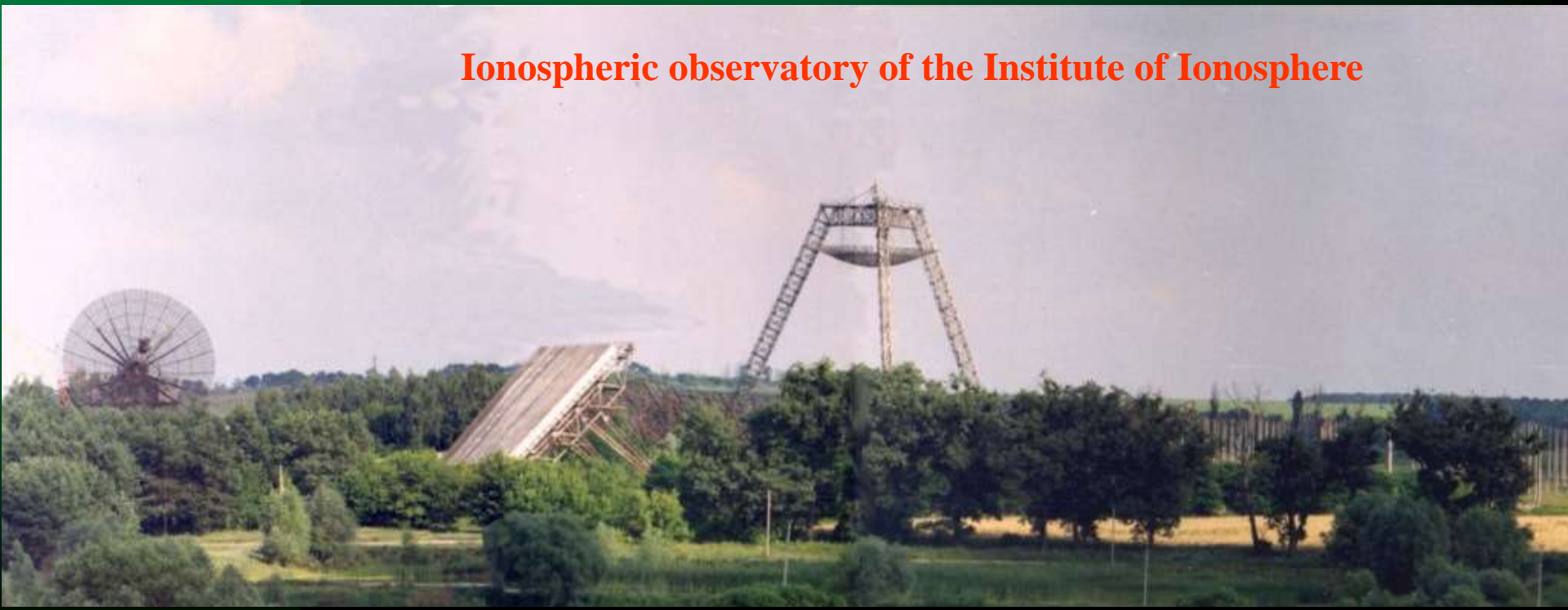




# IONOSPHERIC OBSERVATORY

Training of specialists is carried out in conjunction with the Institute of ionosphere NAS and MES of Ukraine

**Ionospheric observatory of the Institute of Ionosphere**



# Antennas and equipment of the Ionospheric Observatory of the Institute of Ionosphere



The fully steerable antenna.



The 100-m-diameter parabolic antenna



Ionosonde «Basis»



Fragment of the transmitter



Data receiving and processing systems



The HF heating facility



# EMPLOYMENT OPPORTUNITIES

- ✔ electronic industry enterprises;
- ✔ scientific-research institutes;
- ✔ information computational centers;
- ✔ telecommunication agencies (cellular and satellite communications);
- ✔ organizations for development of equipment for automation, systems and networks of data transmission and processing;
- ✔ radio and TV stations;
- ✔ power supply enterprises;
- ✔ electronic trading corporations;
- ✔ enterprises for the production and sale of computer equipment







# CONTACTS

## Department of Radio Electronics

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