

Training

Written by Administrator

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At the faculty students are trained on three qualification level of education: bachelor, specialist, master degree. The term of full-time (or distance) educations is: bachelor – 4 (4,5) years, specialist – 1,5 (1,5) years, master – 2 (2) years.

Academic Program of bachelor degree (from 4 years, or 4,5 years for distance form) is provides a training of:

- 6.051003 «Instrument design and engineering»
- 6.051004 «Optical Engineering»

Academic Program of specialists and masters degree is provides a training on speciality:

- 8.05100301 - Technology of instrument manufacturing;
- 8.05100302 - Instruments and systems of precision mechanics;
- 8.05100303 - Instruments and systems of orientation and navigation;
- 8.05100304 - Instruments and systems of of ecological monitoring;
- 8.05100305 - Instruments and systems of non-destructive testing;
- 8.05100306 - Information technology of instrument manufacturing;
- 8.05100307 - Medical instruments and systems;
- 8.05100403 - Photonics and optoinformatics;
- 8.05100405 - Opto-electronic instrument manufacturing.

The speciality «Instruments and systems of precision mechanics» has three specializations: computer design of equipment and apparatus, means of measurements at the energy saving

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systems, instruments and systems of orientation, navigation and control in the space.

Plan training is provides the fundamental education in mathematics, physics, economics, instrument making management, informatics, modern algorithmic of programming languages, electronics, microprocessor technology, automatic control systems and design, automatic measuring systems, design counter of costs. Students are learning the development methods of precision instruments using computer design systems and acquiring the knowledge in computer graphics and microprocessor technology. Educational programs of the department are aimed to explore by future professionals the latest advances of information technology and computer-aided design (the CAE/CAD/CAM systems).

The employment place of graduates is: business enterprises, institutions and commercial companies of computer direction; businesses businesses what have implementing energy-saving technologies, which use calculator of counter and microprocessing flowmeters; transport companies (development and maintenance of automatic diagnostic systems); state enterprises, which develops and manufactures advanced devices and systems of orientation and navigation; modern printing companies (systems and devices diagnostic, computer graphics, computer training and printing support); nuclear complexes (current diagnostic tools based on artificial intelligence, computer interface with PC); enterprise with development, production and maintenance of modern medical diagnostic and medical equipment.

The speciality «Instruments and systems of of ecological monitoring» - is studying computer information technology together with the basics of electronics, informatics, computer graphics, devices of automatic design, computer integrated systems and mathematical modeling on PC; opto-electronic instrument making using lasers; instruments and systems for scientific research and environmental monitoring; instruments and systems for medical diagnostics and disease prevention; essentials design and maintenance of computer equipments and systems; fundamentals of ecology, economics, law, sociology, management and marketing.

The demand for such specialists is increasing with year by year. Knowledge of humanities, general engineering and special disciplines, combined with practical experience are provide for graduates to broad scope of their acquired knowledge and skills. Also graduates will can quickly achieve the success at work in any field of science, industry, management and social

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sector. Graduates of this department are working in hospitals, educational institutions, research institutes, environmental, metrology and certification laboratories, centers at the positions developer, designer, technologist, and capacities at the all levels of management and administration.

The specialty «Instruments and systems of non-destructive testing». The training program of professionals at this specialty involves the study of acoustic (ultrasound), optical, thermal, magnetic, electrical, eddy current, and other methods of nondestructive testing (NDT) machines, methods of diagnosing diseases in internal organs. The students will acquire skills in designing and creating the most advanced and complex electronic measuring devices. During training the student has to master the basic principles of programming, learning multiple languages (C + +, Assembler). The specialist of NDT can to develop functional and basic circuits instrumentation and computer systems, to develop algorithms for the operation systems, to creates software products for communications system of PC - computer, to knows the element base of electrical systems components and designs of primary probes systems, and to operates and maintains the existing nondestructive systems.

The graduates are working in the laboratories of computerized systems (technical and medical diagnostics), diagnostic medical centers in the development, production, sale and service of instruments and NDT systems as well as in information technology. The place of work can be public or private enterprise of machine building, instrument-making, aircraft, aerospace, petroleum, medical and other industries.

The «Technology of instrument manufacturing» - is the most advanced methods of production equipment and management systems with extensive use of flexible manufacturing systems and automated production systems, automated design, modern methods and means to ensure quality control, as well as practical skills of production and management team with knowledge of the laws of market economics, marketing and management. Future specialists to receive a general fundamental education in engineering disciplines, computer technology and mathematical modeling, economics and production organization in the instrument. Besides they

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are receiving in-depth knowledge of foreign languages and information technology, adopting organization of management decisions.

Professional purpose experts: is manufacture of instruments and systems management, organization and manufacturing technology training, repair and maintenance of instruments and control systems. The graduates will receive qualification an engineer -electrician and works as engineer, design engineer, manager of the company and its divisions, researchers and teachers in educational institutions and other positions.

The specialty «Medical instruments and systems». Such experts are receiving advanced training in fundamental engineering design and manufacturing technology of medical devices and systems, their maintenance, repair and maintenance, as well as effective methods and means to ensure quality of control devices and systems, and their certification. This is practical experience of production and management of team with knowledge of the market economy laws, marketing and management at the medical field. In addition to basic training, the graduates have to study computer technology, foreign language and business communication.

Professional appointment of experts: is the organization and operation of production, repair and maintenance, quality control and certification of medical devices and equipment. Place of working - a medical institutions, industrial enterprises and scientific, educational, engineering and technical centers to service, repair and marketing of medical devices and systems. They are an engineers, managers of the company and its divisions, researchers and teachers in educational institutions and other positions.

The specialty « Opto-electronic instrument manufacturing» - is the development and production of space, aviation, military, environmental and medical optical equipments (including equipments for diagnosis and treatment in oncology, ophthalmology, dentistry, etc.); photo, film and TV equipment, thermal imaging devices, microscopes, telescopes, binoculars,

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telescopes, creating new technologies of light phenomena, the development of equipment for scientific research in virtually all scientific and industrial fields. The graduates are receive basic computer (special) training in the specialty.

Acquired the theoretical knowledge and practical skills of students can be applied in any area of science, engineering and manufacturing, which used optical measurement devices and technology. Curriculum is provides enhanced management and economic training, allowing graduates to work not only on engineering and scientific positions, but also supervisors, managers and leading specialists of many well-known in Ukraine, public and private enterprises engaged in computer, medical and military equipment.