

The purpose of the educational program is to train highly qualified, competitive and in-demand specialists in the field of Robotics and Mechatronics in the labor market, capable of performing design, production, technical, organizational work in professional activities.

Students are trained according to the educational program 6B07113 - Robotics and Mechatronics, conducted at the Institute of Automation and Information Technology at the Department of Robotics and Automation Equipment of KazNTU named after K.I. Satbayev according to license no. KZ56LAA00005304 dated 11.07.2015., issued by the State Institution "Committee for Control in the Field of Education and Science of the Ministry of Education and Science of the Republic of Kazakhstan".

According to the educational program 6B07113 - Robotics and Mechatronics, the educational process is conducted according to the credit technology of training; the training period is 4 years. Qualification - Bachelor of Engineering and Technology.

The educational program 6B07113 - Robotics and Mechatronics in 2021 was accredited by the Independent Agency for Quality Assurance in Education (IQAA).

Admission of students is carried out in accordance with the Rules of admission to the Bachelor's degree. The requirements for the minimum passing score according to the results of the UNT and CT upon admission to the national university (70 points) are met.

The educational program "Robotics and Mechatronics" contains a complete list of academic disciplines grouped into cycles: compulsory disciplines (CD), basic (BD) and profiling disciplines (PD) both by mandatory components and elective components, indicating the complexity of each academic discipline in academic credits and hours established by State mandatory Standards higher and postgraduate education, approved by the Order of the Ministry of Education and Science of the Republic of Kazakhstan No. 604 dated October 31, 2018.

The disciplines of the compulsory component of the CD cycle are aimed at forming the ideological, civic and moral positions of the future specialist, competitive on the basis of knowledge of information and communication technologies, building communication programs in the state, Russian and foreign languages, orientation to a healthy lifestyle, self-improvement and professional success. The BD cycle includes the study of academic disciplines and the passage of professional practice. The PD cycle includes academic disciplines and types of professional practices. The programs of disciplines and modules of the BD and PD cycles are interdisciplinary and multidisciplinary in nature, providing training at the junction of a number of fields of knowledge.

The final certification is carried out in the form of writing and defending a thesis (project) or preparing and passing a comprehensive exam.

The requirements for the level of training of students are determined on the basis of the Dublin descriptors of the first level of higher education (bachelor's degree) and reflect the acquired competencies expressed in the achieved learning outcomes. Learning outcomes are formed both at the level of the entire educational program of higher education, and at the level of individual modules or academic discipline.

Requirements for the level of training of students based on Dublin descriptors are given in the section "Descriptors of the level and scope of knowledge, skills, skills and competencies".

As a result of the training, a bachelor of Robotics and Mechatronics should receive all the necessary knowledge, skills and abilities that ensure the high-quality performance of functional duties in his chosen specialty, as well as acquire socio-humanitarian, economic, organizational and managerial, general scientific and general technical competencies that serve as the foundation for ensuring mobility in the professional labor market and preparedness for graduates to continue education in the field of higher or additional education.

After successful completion of the discipline, the student will be able to (learning outcomes):

1. Demonstrate knowledge of the sections of higher mathematics, physics and other natural sciences and apply them to solve problems that have arisen in the course of professional activity
2. Apply modern software products and the latest technologies to solve and manage interdisciplinary engineering problems in various fields of science and technology
3. Research in the field of development of new samples and improvement of existing Mechatronics and robotic systems, search for new ways of information management and processing
4. Collect and analyze scientific and technical information, taking into account current trends in the development and use of achievements of science, technology and technology in professional activities
5. To determine the safety, environmental friendliness and economic efficiency of the implementation of the projected robotic and Mechatronics systems, their individual modules and subsystems
6. Calculate and design individual blocks and devices of robotic and Mechatronics systems, intelligent control, information-sensor and executive subsystems and Mechatronics modules, in accordance with the terms of reference
7. Plan the testing of modules and subsystems of robotic and Mechatronics systems, organize and conduct experiments on existing objects and experimental models, processing the results of experimental research, using modern information technologies
8. To assess the compliance of the technical documentation of the developed projects with standards and technological conditions
9. Organize the operation, installation and commissioning of modern Mechatronics systems
10. Organize the activities of the team, make organizational and managerial decisions in the context of different opinions and assess the consequences of the decisions taken.