MINISTRY OF SCIENCE AND HIGHER EDUCATION
REPUBLIC OF KAZAKHSTAN
NON-PROFIT JOINT-STOCK COMPANY
"ALMATY UNIVERSITY OF POWER ENGINEERING AND COMMUNICATIONS
NAMED AFTER GUMARBEK DAUKEEV"
Institute of Automation and Information Technology

"Approved"
Director of IAIT
Fedorenko I.A.
"27" 03 2023

7M07105 Automation and control
(scientific and pedagogical direction)
7M07113 Automation and Control (specialized area)

EDUCATIONAL PROGRAM DEVELOPMENT PLAN FOR 2023-2028

Level of the basic educational program
(Master's degree, level 7)
Direction of training:7M071 Engineering and engineering
Group of educational programs:M100 Automation and Control

Almaty 2023

1. INFORMATION ABOUT THE MODULAR EDUCATIONAL PROGRAM

At the Almaty University of Power Engineering and Telecommunications named after Gumarbek Daukeev, at the Institute of Automation and Information Technology (IAIT), specialists are trained in the direction of "7M071 - Engineering and Engineering" in the educational programs of the master's degree "7M07105 - Automation and Control" (scientific and pedagogical direction) and "7M07113 - Automation and Control"
(specialized direction).

The training period for Master's students in the scientific and pedagogical field is 2 years; the degree awarded is Master of Technical Sciences.

The training period for master's degree students in the relevant field is 1.5 years,
Degree awarded: Master of Engineering and Technology.

The educational program "Automation and Control" was developed based on the Law of the Republic of Kazakhstan "On Education" dated July 27, 2007 and regulatory documents: State Compulsory Standard of Postgraduate Education (Order of the Minister of Education and Science of the Republic of Kazakhstan dated October 31, 2018 N° 604), Model Rules for the Activities of an Organization of Higher and Postgraduate Education (Order of the Minister of Education and Science of the Republic of Kazakhstan dated October 30, 2018 N° 595), Rules for the Organization of the Educational Process Using Credit Technology of Education (Order of the Ministry of Education and Science of the Republic of Kazakhstan dated April 20, 2011 N° 152, as amended on October 12, 2018 N° 563), National Qualifications Framework (Approved by the Protocol dated March 16, 2016 of the Republican Tripartite Commission on Social Partnership and Regulation of Social and Labor Relations), regulating the requirements for a graduate with an academic master's degree in the EP - Automation and control.

The purpose of the EP is the training of highly qualified personnel in the field of development, design and operation of automation systems for technical objects and technological processes, and the organization of work on the creation of automatic control systems.

The mission of the program is to prepare master's students as the best intellectual resources for the national knowledge economy and the most advanced technologies for the industrial and innovative development of the country, adapted to the conditions of global integration and globalization.

The scope of professional activity of master's degree students is the development, design, modeling and implementation of automation projects, informatization of production and technological processes, taking into account energy, technological, design, operational, ergonomic and economic indicators.

Types of professional activity - a specialist for work in research universities, research and design institutes, higher education institutions, and enterprises of any profile, capable of performing the following types of professional activity:

- design and calculation and design and engineering;
- production and technological;
- organizational and managerial;
- scientific and pedagogical.

1. MECHANISMS OF EDUCATIONAL MANAGEMENT PROGRAM

The following planning mechanisms are used in the management of educational programs.

At the long-term planning level, overall priority areas and strategic goals for the development of all educational programs are identified, and indicators and performance indicators for specific programs are included. Long-term planning documents include the AUPET vision, mission, strategy, quality policy, and development plan. Short-term development plans for educational programs are based on these documents.

Short-term planning involves two levels.

1. At the university level, short-term planning is represented by AUES quality objectives, improvement plans, work plans for collegial bodies, and annual work plans by area. All of these documents, as well as the plans of structural divisions, address issues related to specialist training and address the challenges of implementing specific programs.

2. At the subdivision level, educational program development planning is reflected in the ISUIT and the graduate department's "Automation and Control" quality objectives, institute plans, and department work plans. ISUIT and department plans must include deadlines for completing activities, responsible persons, and a column for recording completion. Short-term plans are required to be aligned with the university's mission, strategic goals, and objectives, and to include a section on operational improvement.

This set of plans is the primary mechanism for developing educational programs and ensuring their quality. The plans address educational and methodological, practice-oriented, and logistical aspects of program development. At the individual level, planning is represented by individual teaching staff plans.

2. MAIN OBJECTIVES OF THE EDUCATIONAL PROGRAM DEVELOPMENT PLAN

1. Development of new and adjustment of existing Master's degree programs, taking into account proposals from employers and based on research within the university's academic departments.

2. Strengthening the practical aspect of the educational process.

3. Ability to work with scientific and technical information, use domestic and foreign experience in professional activities, systematize and generalize the information received.

2. KEY MEASURES TO REDUCING POTENTIAL RISK

The Department of Automation and Control, which graduates students in the Automation and Control Master's program, is taking certain measures to mitigate potential risks. These risks include a decrease in the program's attractiveness, a decrease in the student body, the inability of graduates to find employment, and a decrease in the competitiveness of graduates in the labor market.

To mitigate risks, the Department of Automation and Control's development plan for the program "Automation and Control" includes measures aimed at eliminating (reducing) these risks: introducing more effective forms of career guidance; fostering a positive image for the program (through the graduation of highly qualified specialists, implementation of research results, etc.); analyzing the labor market and demand for specialists; improving the effectiveness of PR services (media appearances); implementing a set of measures aimed at retaining the student body (psychological support for students throughout their studies, increasing the number of university grants, individualizing education, motivating them to continue their education, etc.).

4. MAIN GOALS AND OBJECTIVES OF THE DEVELOPMENT PLAN WITH INDICATIONS OF THE TIME LIMITS AND STAGES OF ITS DEVELOPMENT

The primary goal of the Development Plan for the "Automation and Control" educational program is to improve it in line with the university's vision, mission, and strategies. This development plan focuses on providing students with a clear future-oriented approach, emphasizing the ability to tailor their education to their personal and professional success, meeting the needs of employers and the modern labor market. The key objectives of the program's development plan are presented in Table 1.

Table 1 - Main objectives of the development plan of the EP

No.	Main tasks	Deadlines execution	Events
1	Improvement improvement conditions for obtaining full-fledged, high-quality	The entire period training	Event development for improvement educational services For development

	professional education		professional skills
2	Attraction employers and other stakeholders in the process improvement of the EP, definitions professional competencies graduate, preparation educational and methodological ensuring discipline, proposed employers	The entire period of study	Annual review and update contents EP based on recommendations employers
3	Expanding ties with foreign partners to implement joint scientific projects research and publication of educational and methodological literature	The entire period training	Implementation of joint scientific research and publication of educational methodological literature
4	Creating the preconditions for independent research activities student within the framework conducting research and development work on all stages of his training	The entire period of study	Conducting scientific research events (conferences, seminars, round tables, etc.)
5	Attraction employers and research institute scientists when choosing topics and writing master's theses dissertations (projects), execution master's dissertations (projects) at the request of employers	The entire period of study	Formation relevant and practically significant topics, taking into account proposals employers
6	Improvement educational and methodological and	The entire period of study	Increase in volume Accessible educational

	material-technical provision of OP		methodological literature, creation special offices, laboratories

3. The list of activities of the EP Development Plan is given in Table 2.

Table 2.

N	Events	Form completion	Responsible persons	Deadlines execution
1	Implementation educational programs, providing continuous education	Inclusion of EP in National register of EP	Graduating department	2020-2025
2	Improving the EP with the participation of potential employers, development implementation programs for double-degree training	Inclusion of EP in National register of EP	Graduating department	2020-2025
3	Promotion qualifications, gradualness PPS through education doctoral studies PhD, passage internships and attraction foreign teachers academic degrees	Achievement shares of PPP with scientists degrees of 90%	Graduating department	2020-2025
4	Extension professional databases	Concluding contracts with employers	Graduating department	2020-2025

	and pedagogical practitioner students			
5	Expanding relations with foreign partners for the purpose of implementation joint scientific research publications of educational methodological literature	Implementation of joint projects, edition educational-methodological literature	Graduating department	2020-2025
6	Attraction in Educational process domestic and foreign practitioners scientific-pedagogical frames from practical work experience	Actual teaching of academic subjects	Graduating department	2020-2025
8	Implementation academic mobility students and teachers	Study and internships at foreign universities	Graduating department	2020-2025

The University evaluates the effectiveness of the Educational Program Development Plan through a SWOT analysis. The results of the SWOT analysis serve as the basis for improving the educational program. The SWOT analysis for the Educational Program Development Plan is presented in Table 3.

Table 3.

Strengths	**Weaknesses**
• Educational program developed jointly with employers. • Provision of modern equipment for educational institutions laboratories.	• Availability not in all regions partners to go through all types of student practices. • Insufficient level publications in international peer-reviewed publications. • Aging of teaching staff and specialists

• Availability of cathedral centers competencies with global standards vendors. • Qualified teaching staff. • Involvement of experienced practitioners work in large enterprises various branches of industry in the educational process as teaching staff. • Stable recruitment. • Joint educational programs with Moscow energy institute, Kazan Energy university, Polytechnic University of Lublin (Poland), Polytechnic University of Poznan (Poland), University of Anhalt (Germany). • Need of the party enterprises in specialists this educational program and, accordingly, high level of employment graduates. • Established connections with industrial enterprises, allowing the implementation of results research and development production processes.	practitioners, low level personnel turnover. • Insufficient level of proficiency English language teaching staff, which does not allow for widespread and effective carry out international cooperation. • Insufficient provision educational process educational literature on official English languages. • Low level of popularization, stimulation and involvement young teachers and students to perform scientific projects, developments. • Low publication rate activity of teaching staff and students. • Low academic mobility of master's students.
Possibilities	**Threats**
• Having connections vendors provides the opportunity creating powerful training centers. • Advanced training of teaching staff on preferential terms in the world companies. • Attractiveness of the EP for students and leading teaching staff of other universities.	• Decrease in degree due to untimely protection doctoral students leaving age-related degree-based teaching staff. • Rapid changes in the market labor that requires necessity adjustments to the OP. • Obsolescence of laboratory

•Attracting young practitioners. • Implementation of dual degree programs with foreign universities and universities of the Republic of Kazakhstan. • Growing demand for high-tech specialties will allow for regular updating of training pathways. • Involving master's students in scientific activities with the aim of subsequently enrolling in doctoral studies and opening start-ups.	equipment, software and computer equipment. • Problems with internship places in the regions against the backdrop of an increasing number of students. • Frequent changes in regulatory frameworks in the field of education and science. • The outflow of qualified teachers and scientists to other industries (commercial) with higher incomes, as well as to other universities. • The outflow of strong students to other universities, including foreign ones.

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