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

"Agreed"
Director
of «Honeywell ACS» LLP
_____ S. K. Abdigaliev
«12» 06 2025y.

"Approval"
Rector of AUPET
_____ G. Nygmetov
«23» 07 2025y.

MODULAR EDUCATIONAL PROGRAM
"7M07105 AUTOMATION AND CONTROL"
(SCIENTIFIC AND PEDAGOGICAL MAGISTRACY)
POSTGRADUATE EDUCATION

Direction of training (according to the Classifier from 13.10.2018):
7M071 Engineering and Engineering work
Group of educational programs:
M100 Automation and control

The term of study is 2 years
Awarded Degree: Master of Engineering Science
Qualification level in accordance with the National Qualifications Framework: level 7.

Almaty 2025 y.

The modular educational program "7M07105 - Automation and Control" was developed on the basis of the Law of the Republic of Kazakhstan "On Education" dated July 27, 2007 and regulatory documents: State obligatory standard for postgraduate education (Order of the Minister of Education and Science of the Republic of Kazakhstan dated July 20, 2022 No. 2), Model rules for the organization of higher and postgraduate education (order of the Minister of Education and Science of the Republic of Kazakhstan dated June 09, 2021 No. 282), Rules for organizing the educational process on credit technology of education (order of the Ministry of Education and Science of the Republic of Kazakhstan dated April 20, 2011 No. 152, as amended from October 12, 2018 No. 563), the National Qualifications Framework (Approved by the protocol of March 16, 2016 by the Republican Tripartite Commission on Social Partnership and Regulation of Social and Labor Relations), Professional standard R 85422 "Teacher (faculty) of organizations of higher and (or) postgraduate education", regulating the requirements for a graduate with an academic master's degree in the specialty 7M07105 - Automation and Control.

The modular ecucational program (EP) was developed at the Department of Automation and Control.

Head of the educational program Khan S.G.

The program was reviewed and approved at a meeting of the department of AC
(minutes No. 11 of 06.05. 2025y.)

Head of the Department of AC _____ Abzhanova L.K.

The program was approved at a meeting of the Scientific Council of the Institute of Automation and Information Technologies
(minutes No. 10 of 12.05. 2025y.)

Director of IAIT _____ Fedorenko I.A.

The EP was reviewed and approved by the AUPET Academic Council
(minutes No. 11 of 23.05.2025y.).

Educational program reviewed and approved

Honeywell-ACS LLP,
Director _____ Abdigaliev S.K.

List of designations and abbreviations

HE	- Higher education
SOSE	- State obligatory standard of education
EQF	- European Qualifications Framework
NCO	- National classifier of occupations
RK	- The Republic of Kazakhstan
NQF	- National Qualifications Framework
NSQ	- National system of qualifications
GEM	- General educational module
EP	- Educational program
GED	- General education disciplines
BC	- Basic component
UC	- University component
EC	- Elective component
BD	- Basic disciplines
PD	- Professional disciplines
IET	- Individual educational trajectory
SQF	- Sectoral Qualifications Framework
PE	- Postgraduate Education
PS	- Professional standard
ON	- Competencies
LO	- Learning outcome
CW	- Course work
SGW	- Settlement and graphic work
RWMS	- Research work of a master student
CED	- Catalog of elective disciplines

1. Passport of the educational program

№	Field name	Note
1	Registration number	7M07100034
2	Code and classification of the field of education	7M07 Engineering, manufacturing and construction industries
3	Code and classification of areas of study	7M071 Engineering and Engineering work
4	Group of educational programs	M100 Automation and Control
5	Name of the educational program	7M07105 Automation and Control (scientific and pedagogical magistracy)
6	EP type	a) Current EP;
7	Purpose of the EP	Training of highly qualified personnel in the field of development, design and operation of automation systems for technical objects and technological processes, organization of work on the creation of automatic control systems.
8	ISCED level	7
9	NQF level	7
10	ORC level	7
11	Distinctive features of the EP	No
	Partner university	No
12	List of competencies	Learning outcomes and correlation of learning outcomes in the educational program with the competencies being formed are presented in **Appendixes 1 and 2**
13	Learning Outcomes	LO-1. Know the main stages of the scientific research process. Own the basics of TRIZ and research methods; LO -2. Own the basic methods of data mining, descriptive analysis, correlation and regression analyses, etc.; LO -3. Own the basic methods of control theory: synthesis of systems with a variable structure, modal control, identification, adaptation, etc. LO -4. Have the skills to create MES-systems that ensure the interaction of subsystems in order to receive and transmit technological and control data; LO -5. Own methods of diagnosing and analyzing the reliability of automation systems, taking into account the characteristics of their qualitative and quantitative indicators; LO -6. Possess the skills of building microprocessor control systems (MCS). Be able to design hardware and software of MCS; LO -7. Know the features of digital control systems. Be able to synthesize digital controllers in the automation of production processes; LO -8. Possess the skills of programmatic and stabilizing optimal control and synthesis of intelligent control systems; LO-9. Possess skills in calculating control system parameters, procedures for the analytical design of regulators .

		LO-10. Demonstrate readiness for pedagogical activity in the field of vocational training. Demonstrate the ability for active social mobility, for independent learning of new research methods, for changing the scientific or industrial profile of one's professional activity in the process of changing the socio-cultural and social conditions of activity.
14	Form of study	Full-time, remote
15	Language of instruction	Russian, Kazakh
16	Volume of loans	120
17	Awarded Academic Degree	Master of Engineering
18	Availability of an application to the license for the direction of personnel training	License No. KZ80LAA00018161 dated 05/05/2020y
19	Availability of EP accreditation	yes
	Name of the accreditation body	IAAR, ASIIN
	Validity of accreditation	IAAR 05.04.2024-04.04.2029, ASIIN 22.03.2024-30.09.2029
20	Information about disciplines	Information about the disciplines of the UC/CC, BD, PD are presented in **Appendix 1**
21	Sphere of professional activity	The scope of professional activity is the development, design, modeling and implementation of automation projects, informatization of production and technological processes, considering energy, technological, design, operational, ergonomic and economic indicators.
22	Types of professional activity	A specialist for work in research universities, research and design institutes, universities at enterprises of any profile, capable of performing the following types of professional activities: - calculation and design and design; - production and technological; - organizational and managerial; - scientific and pedagogical.
23	Modular Curriculum	Shown in **Appendix 2**

2. The matrix of correlation of the educational program's LO with the developed competencies

№	Name of disciplines	LO1	LO2	LO3	LO4	LO5	LO6	LO7	LO8	LO9	LO10
1	History and Philosophy of Science										✳
2	Professional Foreign Language										✳
3	Psychology of management										✳
4	Higher school pedagogy										✳
5	Methods for the Expression of Uncertainty in Measurements	✳				✳					
	Fundamentals of Measurement Uniformity and Technical Regulation	✳				✳					
7	Theory and technique of engineering experiment	✳	✳								
8	Experiment planning	✳	✳								
9	Methods and Models of CADS of Automation Systems in HPE					✳				✳	
10	Methods and Models of CADS of Automation Systems in EE					✳				✳	
11	Methods of modern theory of automatic control		✳	✳							
	Automation of technical systems		✳	✳							
12	Industrial networks of distributed automation systems				✳						
13	Industrial Network Technologies				✳						
16	Integration of digital technology into control automation systems						✳	✳			
17	Dispatch Systems of Automation Tasks						✳	✳			
18	Software for Microprocessor Controllers in Automation Tasks						✳			✳	
19	Libraries of Software Systems for Industrial Controllers						✳			✳	
20	Theory and practice of project management	✳									✳

21	Organization and management of public procurement	✲									✲
22	Information Technology in Control Systems Research		✲						✲		
23	Fundamentals of smart technologies in control systems		✲						✲		
24	Intelligent control systems								✲		
	Neural network technologies								✲		
27	Pedagogical practice										✲
28	Research practice	✲						✲			
29	Research work, including the implementation of a master's thesis (RWM)	✲		✲							
30	Design and defense of a master's thesis	✲					✲			✲	