MINISTRY OF EDUCATION AND SCIENCE OF THE REPUBLIC OF KAZAKHSTAN
GUMARBEK DAUKEEV ALMATY UNIVERSITY OF POWER ENGINEERING AND TELECOMMUNICATION NON-COMMERCIAL JOINT STOCK COMPANY
Institute of Automation and Control Systems

"Agreed."
Director
"Honeywell-Automatic Control System"
LLP
_____ S.K.Abdigaliev
"12" 05 2025 г.

"Approved."
Rector of AUPET
_____ Nygymetov G.S.
"_____" _____ 2025 г.

MODULAR EDUCATION PROGRAMME "8D07103 - AUTOMATION AND CONTROL". POSTGRADUATE EDUCATION

Field of Education (according to the qualifier dated 13.10.2018): 8D07 Engineering, manufacturing and construction industries
Training direction (according to the qualifier dated 13.10.2018): 8D071 Engineering and Engineering Business

Term of study - 3 years
Awarded academic degree - Doctor of Philosophy (PhD) in OP "8D07103 - Automation and Control"
Qualification level according to the National Qualifications Framework: Level 8.

Almaty 2025

The OP is developed on the basis of: National Qualifications Framework, Approved by the protocol of 16 March 2016 by the Republican Tripartite Commission on Social Partnership and Regulation of Social and Labour Relations; State obligatory standard of postgraduate education, Approved by the Resolution of the Government of the Republic of Kazakhstan from 23.08.2012 №1080 (outlined with amendments in the wording of the Resolution of the Government of the Republic of Kazakhstan. Order of the Minister of Education and Science of the Republic of Kazakhstan from 31 October 2018 № 604. Registered with the Ministry of Justice of the Republic of Kazakhstan on 1 November 2018 No. 17669.).

The educational programme is developed at the Department of Automation and Control.

Head of the educational programme Toibaeva Sh.D.

The OP is considered and approved at the meeting of the Department of "Automation and Control" Minutes № 11 from "06" May 2025.

Head of AU Department _____ Abzhanova L.K.

The OP was considered and approved at the meeting of the Council of the Institute of Automation and Information Technologies, Minutes No. 10 of "12" May 2025.

Director of IAIT _____ Fedorenko I.A.

The OP was reviewed and approved by the Academic Council of AUES named after Gumarbek Daukeev (Minutes No. 11 of "23" May 2025).

The educational programme has been reviewed and approved

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

List of designations and abbreviations

HE	- Higher education
GOSO	- State obligatory standard of education
ECR	- European Qualification Framework
NFP	- National Classification of Occupations
RK	- Republic of Kazakhstan
NRC	- National Qualifications Framework
NSC	- National Qualifications System
OOM	- General education module
OP	- Educational programme
OOD	- General education disciplines
OK	- Mandatory component
VC	- University component
DB	- Basic disciplines
AP	- Specialised disciplines
IOT	- Individual educational trajectory
ORC	- Sectoral Qualifications Framework
SAR	- Professional standard
AIR DEFE NCE	- Postgraduate education
ON	- Competences
RO	- Learning Outcome
CR	- Coursework
WGR	- Graphical calculation
NIRS	- Research work of students
QED	- Catalogue of elective disciplines

1. Passport of the educational programme

№	Field name	Note
1	Registration number	8D07103
2	Code and classification of the field of education	8D07 Engineering, manufacturing and construction industries
3	Code and classification of training areas	8D071 Engineering and Engineering Science
4	Group of educational programmes	D100 Automation and control
5	Name of OP	8D07103 - Automation and control (doctoral studies in science and pedagogy)
6	Type of OP	Current OP
7	Purpose of the OP	Training of highly qualified scientific and pedagogical personnel, who possess modern methods of design and research, capable of solving automation and control problems in various branches of industry, education and other spheres of human activity.
8	ISCED level	ISCED 8 Doctoral studies or equivalent
9	NSC level	8
10	OCR level	8
11	Distinctive features of the OP	No
	Partner HEI (SOP)	No
	Partner institution of higher education (PIU)	No
12	List of competences	Learning outcomes and correlation of the learning outcomes of the educational programme with the competences formed are presented **in Annexes 1 and 2**
13	Learning Outcomes	ON-1 Disclose the content of a research paper. Justify, analyse and formulate decision-making options. Apply methods of scientific research and systems analysis in the development of automation and control systems. ON-2 Possess intellectual methods of synthesis of control systems using expert systems, fuzzy logic and neural network structures ON-3 Possess technologies and software tools for planning, design, engineering analysis and management of technological complexes, production and business processes. ON-4 Develop and investigate simulation models and control algorithms in the field of automation based on modern mathematical methods and tools. ON-5 Apply new information technologies and methods of machine learning and intelligent systems to improve the efficiency of production management.
14	Form of training	Face-to-face, distance learning
15	Language of instruction	Russian
16	Volume of loans	180

17	Academic degree awarded	Doctor of Philosophy (Ph.D)
18	Availability of an annex to the licence for the direction of training	Licence No. KZ80LAA00018161 dated 05.05.2022
19	Availability of accreditation of the OP	Got it
	Name of accreditation body	IAAR NU "Independent Agency for Accreditation and Rating"
	Accreditation validity period	05.04.2024-04.04.2029
20	Information on disciplines	Information on the disciplines VK/VQ OOD, DB, PD **(Annex 1)**
21	Area of professional activity	Development of automation and control systems on the basis of modern achievements of science and technology in the spheres of industrial automation, it-technologies and computerisation of production taking into account energy, technological, design, operational, ergonomic and economic indicators.
22	Types of professional activities	Leading innovative development and performing work in research and design organisations, higher education institutions and enterprises of any profile, which may include the following professional activities: - calculation, design and engineering; - production and technology; - organisational and managerial; - scientific and pedagogical.
23	Modular curriculum	Given in **Annex 2**

2. Matrix of correlation of learning outcomes for the educational program as a whole with the developed competencies

№№	Module code, discipline	Name of the module, discipline	PO1	PO2	PO3	PO4	PO5
	МАУД-01	**Modern educational technologies and organization of scientific research**			**8**		
1	HUM 72012	Academic Writing	+				
2	MNI-7202	Scientific Research Methods	+				
	МАУД-02	**Modern Aspects of Automation and Control**			**17**		
3	MESUP 7302	MES and ERP Systems for Managing Production and Business Processes			+		
4	ESMII 7301	Expert Systems and Artificial Intelligence Methods		+			
5	SMISU7303	Modern Methods for Control Systems Research	+			+	
4	MISU 7303	Machine Learning and Intelligent Systems					+
	7305MOAS	Machine Learning in Automated Systems					+
5	MMMID 7303	Mathematical Models and Methods for Studying Dynamic Processes				+	
	MISU 7303	Mathematical Tools for Control Systems				+	
	МАУД-03	**Research and Dissertation Work**			**123**		
6	NIRD-8401-4	Research, including doctoral dissertation work	+	+	+	+	
	МАУД-04	**Professional Internship**			**20**		
7	PP 7203-4	Teaching Internship	+				
8	IP 8301-2	Research Internship	+	+	+	+	+
	FINAL CERTIFICATION				**12**		
		Comprehensive Exam					
		Doctoral Dissertation Preparation and Defense	+	+	+	+	+
TOTAL FOR THE ENTIRE PERIOD OF STUDY					**180**		