MINISTRY OF SCIENCE AND HIGHER EDUCATION OF THE REPUBLIC OF KAZAKHSTAN
NON-PROFIT JOINT STOCK COMPANY
"GUMARBEK DAUKEEV ALMATY UNIVERSITY OF ENERGY AND COMMUNICATION"
Institute of Automation and information technologies

"Agreed"
"itpartner.kz" LLC
Co-founder and technical director
_____ I. Kemelbekov
« 2 » _____ 2025

"Approved"
Rector of AUPET
_____ G. Nygymetov
« » _____ 2025

MODULAR EDUCATIONAL PROGRAM
DIRECTION 6B06102 - INFORMATION SYSTEMS
HIGHER EDUCATION

Area of education (according to the classifier dated 10/13/2018): 6B06 - Information and communication technology
Direction of study (according to the classifier dated 10/13/2018): 6B061 - Information and communication technology

Duration of study - 3 years
Awarded academic degree: _Bachelor of Engineering and Technology_
Qualification level in accordance with the National Qualifications Framework: Level 6.

Almaty 2025

Training trajectories (specialty):
IT management
Multimedia and virtual reality systems
Intelligent Information Systems

The EP is developed on the basis of: 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; Sectoral qualifications framework "Information and communication technologies", Approved by the protocol of the meeting of the Sectoral Commission in the field of information, informatization, communications and telecommunications dated December 20, 2016 No. 1; State compulsory standard of higher education, Approved by the Decree of the Government of the Republic of Kazakhstan dated 08.23.2012 No. 1080 (amended by the decree of the Government of the Republic of Kazakhstan. Order of the Minister of Education and Science of the Republic of Kazakhstan dated October 31, 2018 No. 604. Registered in the Ministry of Justice of the Republic of Kazakhstan from November 1, 2018 No. 17669.); Professional standards or standard projects.

The educational program was developed at the Department of IT Engineering and Artificial Intelligence.

Head of the educational program Tussupova B.

The EP was considered and approved at a meeting of the Department of IT Engineering and Artificial Intelligence of 04.03.2025, Minutes № 8.

Head of the IT Eng. & AI department _____ Utegenova A.

The EP was reviewed and approved at a meeting of the Academic Council of the Institute of Automation and Information Technologies (Minutes №. 9 dated May 12, 2025).

Director of the IAIT _____ Fedorenko I.

The EP was reviewed and approved by the AUPET Academic Council (Minutes № 11 dated May 23, 2025).

List of symbols and abbreviations

HE	- Higher education
STSE	- State Compulsory Standard of Education
EQF	- European Qualifications Framework
NCO	- National classifier of occupations
RK	- Republic of Kazakhstan
NQF	- National Qualifications Framework
NQS	- National Qualifications System
GEM	- General educational module
EP	- Educational program
GED	- General educational disciplines
CC	- Compulsory component
UC	- University component
BD	- Basic disciplines
PD	- Profile disciplines
IEP	- Individual educational path
SQF	- Sectoral Qualifications Framework
PS	- Professional standard
PGE	- Postgraduate education
ON	- Competencies
LO	- Learning outcome
CW	- Course work
CGW	- Calculation and graphic work
RWS	- Research work of students
CED	- Catalog of elective disciplines

1. Educational program passport

№	Field name	Notes
1	Registration number	6B06100033
2	Code and classification of the field of education	6B06 Information and communication technology
3	Code and classification of training areas	6B061 Information and communication technology
4	Group of educational programs	B057 - Information Technology
5	Name of educational program	6B06102 - Information System
6	Type of EP	Current EP
7	Purpose of EP	Providing comprehensive and high-quality training of qualified, competitive specialists in various fields of application of information systems and technologies.
8	ISCE level	ISCE 6 Baccalaureate or its equivalent
9	NQF level	6
10	SQF level	6
11	Distinctive features of EP	No
	Partner university (JEP)	No
	Partner university (AEP)	No
12	The list of competencies	ON-1. To apply knowledge of the humanities, environmental, social and legal, economic sciences, physics and higher mathematics in all fields of activity.
13	Learning outcomes	ON-2. To develop data structures and algorithms for solving problems, to perform their software implementation, to support information systems and networks. ON-3. To be able to develop, apply mathematical and/or simulation models and methods in the design of various processes in information systems. ON- 4. To design and manage databases of information systems. To know the basics of computer systems and networks administration. ON-5. To be able to design the architecture of an information system. To explain the choice of system, instumnental and application software. ON-6. To design, develop expert, intelligent, robotic systems. To select the best solutions at their design. ON-7. To create an ergonomic design of information systems. To know modern tools and development environments for mobile, network applications. ON-8. To design algorithms and methods for information security and system reliability. To be able to make managerial and technical decisions. ON-9. Know the methods of scientific research and academic writing and apply them in the field of study. Apply knowledge and understanding of facts, phenomena, theories and complex relationships between them in the field of study. Understand the importance of the principles and culture of academic integrity. (appendix 1)

14	Form of learning	Full-time, distance
15	Language of learning	Russian, Kazakh, English
16	Credits	240
17	Awarded Academic Degree	Bachelor in the field of information and communication technologies on the educational program "6B06102 - Information Systems"
18	Availability of an appendix to the license for the training	No. KZ80LAA00018161 dated May 5, 2020
19	Availability of accreditation of EP	Yes
	Name of accreditation body	IAAR Non-profit organization "Independent agency for accreditation and rating"
	Accreditation Duration	05.04.2024-04.04.2029
20	Information about disciplines	Information about disciplines of UC/OC GED, BD, PD (Appendix 1)
21	Professional activity	industry, science, education, culture, healthcare, agriculture, public administration.
22	Types of professional activity	design and engineering; production and technological; organizational and managerical; operational
23	Modular Curriculum	Given in appendix 2

2. The matrix of correspondence of learning outcomes in the educational program as a whole with the competencies being formed

№	Name of the discipline	ON1	ON2	ON3	ON4	ON5	ON6	ON7	ON8	ON9
1	Information and communication technologies	v								
2	Kazakh (Russian) language 1	v								
3	Kazakh (Russian) language 2	v								
4	Foreign language 1	v								
5	Foreign language 2	v								
6	Module social-floor characters (sociology, political science)	v								
7	History of Kazakhstan (in Kazakh language)	v								
8	Module social-floor characters (cultural studies, psychology)	v								
9	Philosophy	v								
10	Physical Education 1	v								
11	Physical Education 2	v								
12	Physical Education 3	v								
13	Physical Education 4	v								
14	Sustainable Development: Ethics, Inclusion and Safety	v								
15	Calculus I	v								
16	Linear Algebra	v								
17	Calculus II	v								
18	Physics	v								
19	Calculus I		v							
20	Linear Algebra						v			
21	Basics of Information Systems					v				
22	Probability theory and elements of mathematical statistics			v						
23	Database systems				v					
24	IT infrastructure					v				
25	Economics and law, entrepreneurship and financial literacy	v								
26	System Programming		v							
27	Big Data Basics				v					
28	Fundamentals of scientific research and academic writing									v
29	Design and Development of Server and Client Web Applications 1 (Front-End)		v					v		
30	Design and development of server and client web applications 2 (Back-End)		v							
31	Development of a technology startup	v								
Cycle of basic disciplines (BD)										

№	Name of the discipline	ON1	ON2	ON3	ON4	ON5	ON6	ON7	ON8	ON9
32	**Optional discipline 1 (choose 1 of 2)**									
	Technology of programming		v							
	Olympiad Programming		v							
33	**Optional discipline 2 (choose 1 of 2)**									
	Special operating systems					v				
	Linux operating system					v				
	Minor									
34	**Optional discipline 3 (choose 1 of 2)**									
	Object oriented programming		v							
	Visual programming		v							
35	**Optional discipline 4 (choose 1 of 3)**									
	Robot control systems						v			
	Arduino and 3D printing technologies						v			
	Minor									
36	**Optional discipline 5 (choose 1 of 2)**									
	Basics of operations research			v					v	
	Theory of Decision Making			v						
37	**Optional discipline 6 (choose 1 of 2)**									
	Data protection and security in information systems								v	
	Methods and means of information protection								v	
38	**Optional discipline 7 (choose 1 of 2)**									
	Computer modelling			v						
	Information Systems Modeling			v						
39	**Optional discipline 8 (choose 1 of 2)**									
	Java programming							v		
	Net programming							v		
40	**Optional discipline 9 (choose 1 of 2)**									
	Fundamentals of building intelligent information systems						v			
	Methods of Intelligent Data Analysis (Data Mining)						v			
	A cycle of majors discipline									
41	**Optional discipline 1 (choose 1 of 2)**									
	Computer networks				v					
	Fundamentals of Network Technologies				v					
	Minor									
42	**Optional discipline 2 (choose 1 of 2)**									
	Information Systems Design					v				
	Methods and tools for designing information systems					v				

№	Name of the discipline	ON1	ON2	ON3	ON4	ON5	ON6	ON7	ON8	ON9
43	**Optional discipline 3 (choose 1 of 2)**									
	Mobile Application Development Technologies						v			
	Development of applications for mobile devices based on Android						v			
44	**Optional discipline 4 (choose 1 of 2)**									
	Development of corporate information systems using Oracle				v					
	Development of corporate information systems using SQL				v					
45	**Optional discipline 5 (choose 1 of 2)**									
	Expert Systems						v			
	Artificial intelligence systems						v			
	Trajectory (specialization) IT management									
46-1	Fundamentals of Management Theory			v						
47-2	Data Management in Information Systems				v					
48-3	IT project management						v			
	Trajectory (specialization) Multimedia and virtual reality systems									
46-1	3D modeling systems			v						
47-2	Interactive Graphic Systems			v						
48-3	Virtual and Augmented Reality Technologies			v						
	Trajectory (specialization) Intelligent information systems									
46-1	3D modeling systems						v			
47-2	Interactive Graphic Systems						v			
48-3	Virtual and Augmented Reality Technologies						v			