

«Kazakh University of Technology and Business" named after K.Kulazhanova» JSC

EDUCATIONAL PROGRAM

7M06136 - Information systems
code and name of the educational program

Level: Master's (scientific and pedagogical)

Approved

by the Board of Directors of JSC

«K. Kulazhanov KazUTB» «18» 03 2026,
protocol No. 4



Recommended

by the Academic Council of JSC

«K. Kulazhanov KazUTB» «27» 02 2026,
protocol No. 7

Astana – 2026

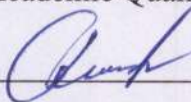
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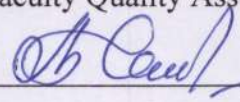
Preface

The educational program «7M06136 - Information Systems» was developed in accordance with the requirements of the State Mandatory Standard of Higher and Postgraduate Education, approved by the Order of the Minister of Science and Higher Education of the Republic of Kazakhstan dated July 20, 2022 No. 2, as well as on the basis of professional standards: «Professional standards: for teachers (faculty) of organizations of higher and (or) postgraduate education» No. 591 dated 11/20/2023; «Software Architects» No. 569/NK November 10, 2025; Atlas of new professions and competencies in the Republic of Kazakhstan «DevOps engineer»; Regional atlases of new professions and competencies of the Karaganda region «Data Scientist».

The Educational Program «7M06136 - Information Systems» was approved at the meeting of the Council on Academic Quality from on «22» 01 2023 Minutes No. 3.

Chairperson  Askarbekov E.B

The Educational Program «7M06136 - Information Systems» was reviewed and approved at the meeting of the Faculty Quality Assurance Commission on «21» 12 2023 Minutes No. 3/1.

Chairperson  Serimbetov B.A.

The Educational Program «7M06136 - Information Systems» was developed and discussed at the meeting of the Department of Information Technologies on «10» 12 2023 Minutes No. 5.

Head of the Department  Abdugarimova A.A.

Approval sheet

Educational program 7M06136 – «Information Systems»
(code and name of the EP)

AGREED:

Vice-Rector for
Administrative Affairs



E.B. Askarbekov

"22" 01 2026 year

Head of Educational
Programs Department




PP

B.M. Bayadilova

"22" 01 2026 year

Deputy General Director
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O.Zh. Mamyrbayev

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Astana, systems engineer


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B. Khudabay

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Director of Business
Development at
«Tax&Communications».
LLP

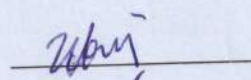


PP

A. Talgatbekuly

"10" 12 2025 year

Master's student



A.E. Imangazin

"10" 12 2025 year

1. Passport of the educational program

International Standard Classification of Education (ISCED) level	7
National Qualification Framework (NQF) level	7
Sectoral Qualifications Framework (SQF) level	7
Code and name of the field of education	7M06- Information and communication technologies
Direction of training	7M061- Information and communication technologies
Number and name of the group of educational programs	M094- Information technology
Code and name of the educational program (EP)	7M06136 - Information Systems
Educational program profile	Scientific and pedagogical
Goal of the educational program	The purpose of this master's program is to train masters who are able to effectively conduct research, develop and implement information technologies and systems, as well as formulate and solve modern scientific and practical problems, plan and conduct research activities on the topic of scientific research.
Completion criterion of an educational program	At least 120 academic credits, including all types of undergraduate academic activities
Language of instruction of the	Kazakh, Russian
Distinctive features of the educational program	-
Partner University	-

2. Qualification characteristics of a graduate of an educational program

Degree awarded	Master of Technical Sciences in the educational program «7M06136 - Information Systems»
Field of professional activity	Organizational and managerial: - Managing the activities of IT departments and organizations involved in IT projects; - Development and implementation of innovative forms of management of organizations and other branches of human activity. - Scientific research: - Scientific research in the field of information and communication technologies. - Project information: - Development and maintenance of software for various branches of human activity. - Pedagogical: - Realization of educational services in the field of information and communication technologies.
Types of professional activities	Design, production and technological, organizational and managerial, scientific and research, pedagogical.
Object of professional activity	Enterprises and organizations of various forms of ownership, whose activities are related to the development, training, implementation, and maintenance of information technologies and systems in various fields of human activity.
Functions of professional activity	- Analysis of the possibilities of creating software architecture and key scenarios; - Management of methods and methods of interaction and modernization of software; - Socialization of learning youth; - Conducting scientific research; - Training.

3 Requirements for the content of the educational program

Name of cycles and disciplines	Workload in academic credits
Naming of cycles and disciplines	88
Cycle of basic disciplines (BD)	35
University component, including pedagogical practice	20
Component of choice	15
Cycle of profile disciplines (PD)	53
University component	10
Component of choice	30
Research practice	13
Research work of a master's student, including an internship and the completion of a master's thesis	24
(Registration and defense of the Master's Degree project (MIS))	8
Total	120

4. Competency map of the educational program «7M06136 - Information systems»

Competence map of the educational program	Learning outcome code	Learning Outcome (according to Bloom's Taxonomy)
Learning Outcome (according to Bloom's Taxonomy)	LO1	Analyzes scientific knowledge and philosophical concepts based on the study of the influence of historical and cultural factors on the formation of science.
	LO2	Uses professional vocabulary and specialized language constructions for the analysis, interpretation and presentation of information in scientific and professional activities.
	LO3	Implements managerial, scientific and pedagogical functions based on the synthesis of psychological methods and pedagogical foundations.
	LO4	Applies modern pedagogical approaches, teaching methods and educational technologies in the design and implementation of the educational process in higher education.
Digital competencies (Digital skills)	LO6	Makes informed decisions based on a systematic analysis of information processes, structure and behavior of systems.
	LO8	Designs intelligent decision support systems based on complex modeling and analysis of big data using machine learning methods.
	LO9	Organizes secure data processing and storage in corporate information systems based on blockchain technologies.
Professional skills (Hard skills)	LO5	Designs the architecture, infrastructure, business processes of information systems and key scenarios of their functioning while coordinating all stages of product development.
	LO7	Administers network infrastructures for the effective functioning of the corporate IT environment.

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Distinctive features of the educational program	-
Partner University	-

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Degree awarded	Master of Technical Sciences in the educational program «7M06136 - Information Systems»
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Types of professional activities	Design, production and technological, organizational and managerial, scientific and research, pedagogical.
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Professional skills (Hard skills)	LO5	Designs the architecture, infrastructure, business processes of information systems and key scenarios of their functioning while coordinating all stages of product development.
	LO7	Administers network infrastructures for the effective functioning of the corporate IT environment.

5 Learning outcomes of the educational program and modules

Key competencies	Learning Outcomes (LO) for the educational program	Name of module	Learning outcomes for the module	Name of disciplines that form learning outcomes
Behavioral skills and personal qualities (Soft skills)	LO1 Analyzes scientific knowledge and philosophical concepts based on the study of the influence of historical and cultural factors on the formation of science.	Basic disciplines of module	Demonstrates knowledge of the main stages of the formation and development of science and world philosophical thought; understanding the professional and social necessity of their own scientific work	History and philosophy of science
	LO2 Uses professional vocabulary and specialized language constructions for the analysis, interpretation and presentation of information in scientific and professional activities.		Uses the techniques of logical analysis of scientific texts in a foreign language. Demonstrates knowledge of modern methods and technologies of professional communication in a foreign language.	Foreign language (professional)
	LO3 Implements managerial, scientific and pedagogical functions based on the synthesis of psychological methods and pedagogical foundations.		Demonstrates the ability to apply knowledge of psychology for the purpose of self-knowledge and the knowledge of others.	Management psychology
	LO4 Applies modern pedagogical approaches, teaching methods and educational technologies in the design and implementation of the educational process in higher education.		Uses knowledge of teaching methods in organizing and conducting training sessions, Demonstrates knowledge of the theoretical and methodological foundations of teaching, the formation of professional and pedagogical culture and moral attitudes. Draws up programs and plans using various teaching methods and technologies	Pedagogics of higher school

Digital competencies (Digital skills)	LO8 Designs intelligent decision support systems based on complex modeling and analysis of big data using machine learning methods.	Intelligent information systems and big data analysis	Develops and analyzes conceptual and theoretical models for solving scientific and applied problems in the field of information technology. He is proficient in modern methods and tools for analyzing and processing big data.	Big Data Processing and Analysis
	LO8 Designs intelligent decision support systems based on complex modeling and analysis of big data using machine learning methods.	Intelligent information systems and big data analysis	They have the knowledge and skills to apply machine learning methods to analyze big data, build intelligent models, and solve practical problems in their professional activities.	Machine Learning for Big Data Analysis
	LO6 Makes informed decisions based on a systematic analysis of information processes, structure and behavior of systems.	Intelligent information systems and big data analysis	They have the skills to quantify information; calculate information losses; calculate information transfer rate and bandwidth of communication channels; use codes that detect and correct errors.	Applied Information Theory
	LO9 Organizes secure data processing and storage in corporate information systems based on blockchain technologies.	Control systems and artificial intelligence	He has the skills of modeling and designing information processes; methods of developing project documentation for information systems.	Governmental and Corporate Information System Models
	LO8 Designs intelligent decision support systems based on complex modeling and analysis of big data using machine learning methods.	Intelligent information systems and big data analysis	They have knowledge of modern innovative trends in science, allowing them to develop and use high-tech, intelligent systems in education.	Artificial Intelligence Methods in Information Systems
	LO9 Organizes secure data processing and storage in corporate information systems based on blockchain technologies.	Control systems and artificial intelligence	They have knowledge of the principles of building enterprise management information systems, their classification, structure, as well as the basic economic and mathematical methods used in these systems.	Modern Enterprise Management Systems

LO9 Organizes secure data processing and storage in corporate information systems based on blockchain technologies.	/Control systems and artificial intelligence	Has knowledge of the implementation of technical security measures, the skills to install, configure and maintain technical security tools such as firewalls, intrusion detection systems, antivirus programs, etc.	Information Systems Security Management
LO8 Designs intelligent decision support systems based on complex modeling and analysis of big data using machine learning methods.	Control systems and artificial intelligence	Has knowledge of data collection. Understands data collection processes and methods, including automated collection, user input, and integration of data from various sources. Knows the principles and methods of data storage, including the selection of suitable storage technologies (relational and non-relational databases, file systems, cloud storage, etc.), as well as data storage capacity and performance management.	Information Systems Data Management
LO9 Organizes secure data processing and storage in corporate information systems based on blockchain technologies.	Analysis and mathematical modeling	He got acquainted with the possibilities of using blockchain technology in making managerial decisions, such as automating business processes, increasing transparency and reliability of data, in relation to financial accounting, logistics and document management.	Blockchain Technology in the Digital Transformation of Information Systems
LO8 Designs intelligent decision support systems based on complex modeling and analysis of big data using machine learning methods.	Analysis and mathematical modeling	They master the methods of mathematical and algorithmic modeling in the analysis of problems of engineering and natural sciences	Models and Methods of Decision Support

	LO8 Designs intelligent decision support systems based on complex modeling and analysis of big data using machine learning methods.	Analysis and mathematical modeling	Possess and have experience in: applying modern terminology in the field of decision support systems and problem solving methodology in the field of multidimensional data analysis; using modern software packages for multidimensional analysis. The discipline involves the formation of skills in building decision support systems, working with OLAP systems, applying multidimensional analysis methodology, Data Mining technologies, and using data analysis tools.	Data Analysis and Modeling
	LO6 Makes informed decisions based on a systematic analysis of information processes, structure and behavior of systems.	Module of compulsory disciplines	Manages software product quality assurance processes in accordance with regulatory documents	Systems Theory and Systems Analysis in IT
	LO6 Makes informed decisions based on a systematic analysis of information processes, structure and behavior of systems.	Module of compulsory disciplines	Organization of information processes at the physical and channel levels, the study of modern methods and models for building information systems of various types.	Theoretical Foundations of Information Processes
Hardskills	LO5 Designs the architecture, infrastructure, business processes of information systems and key scenarios of their functioning while coordinating all stages of product development.	Intelligent information systems and big data analysis	They have knowledge of modern software engineering methods and technologies that allow them to develop, test and maintain high-quality software systems.	Software Engineering
	LO5 Designs the architecture, infrastructure, business processes of information systems and key scenarios of their functioning while coordinating all stages of product development.	Intelligent information systems and big data analysis	They have knowledge about the structure of the information process, the basics of organizing information processes, They possess the skills of formalized description of information processes	Architecture and Infrastructure of Information Systems

			and objects.		
	LO5 Designs the architecture, infrastructure, business processes of information systems and key scenarios of their functioning while coordinating all stages of product development.	Analysis and mathematical modeling	They know the methods of automated development of simulation models, collection and processing of the results necessary for professional activity.	Simulation Modeling and Business Process Optimization	
	LO5 Designs the architecture, infrastructure, business processes of information systems and key scenarios of their functioning while coordinating all stages of product development..	Module of compulsory disciplines	Possess and have experience in: applying modern terminology in the field of decision support systems and problem solving methodology in the field of multidimensional data analysis; using modern software packages for multidimensional analysis. The discipline involves the formation of skills in building decision support systems, working with OLAP systems, applying multidimensional analysis methodology, Data Mining technologies, and using data analysis tools.	Analysis, Design and Planning of IS	
	LO7 Administers network infrastructures for the effective functioning of the corporate IT environment.	Intelligent information systems and big data analysis	They have knowledge of enterprise automation and their business lines, They have the skills to choose approaches to solving problems of data quality, server virtualization technology, and workplace virtualization.	IT Infrastructure and Enterprise Application Systems	
	LO7 Administers network infrastructures for the effective functioning of the corporate IT environment.	Control systems and artificial intelligence	They have the skills to obtain and apply methods and technologies for organizing and implementing the educational process at various educational levels in various educational organizations.	Design and Management of Network Technologies	

6 The relationship between the attainability of the formed learning outcomes according to the educational program and academic disciplines

№	Name of the discipline	Brief description of the discipline	Number of credits	Formed learning outcomes (codes)								
				LO1	LO2	LO3	LO4	LO5	LO6	LO7	LO8	LO9
Cycle of basic disciplines												
University component/Elective component												
1	Foreign Language (Professional)	The discipline is aimed at developing academic interaction and scientific writing skills. While studying the subject, the master's student systematizes foreign information in their field of expertise and conducts professional activities in a foreign language. This enables the effective presentation of original research results in an international environment, the preparation of articles for high-ranking journals, and the delivery of lectures on specialized subjects, thereby enhancing the overall competitiveness of the future researcher.	4		+							
2	History and Philosophy of Science	The discipline aims to cultivate a culture of scientific thinking and develop methodological analysis skills. The learning process focuses on a profound understanding of the specifics of cognition, ensuring the high-quality completion of the master's thesis and the achievement of a high level of academic integrity in preparing scientific publications. Throughout the course, the master's student analyzes the theoretical problems of modern science and substantiates the methodological framework of their own scientific research.	4		+							

[illegible]

12	Analysis, Design and Planning of IS	The discipline focuses on the study of modeling, IP design for effective data and process management. The concepts of system analysis and IP architecture are considered. As a result of studying the discipline, the student uses information system modeling and design methods to effectively manage data and business processes.	5							+									
13	Theoretical Foundations of Information Processes	The discipline is aimed at studying methods for evaluating the effectiveness of virtualization in educational organizations using the Proxmox VE platform. The principles of virtualization, computing resource management, deployment and administration of virtual environments are studied. As a result of studying the discipline, the student uses virtualization methods to design, implement and maintain the IT infrastructure of an educational organization, implements virtualization strategies on the Proxmox VE platform.	5								+								
14	Design and Management of Network Technologies	The discipline is aimed at studying the principles of design, implementation and administration of modern computer networks, methods of managing the network infrastructure of an organization. The discipline examines network architectures, network protocols, data transmission technologies, and issues of ensuring the reliability, security, and efficiency of network systems. As a result of the study, the student uses modern network technologies, develops	5								+								

7 Alignment of planned learning outcomes with teaching and assessment methods within the module

Learning Outcomes (LO) Number	Planned learning outcomes for the module	Assessment technologies (tools)	Methods of learning and teaching
LO 1	Analyzes scientific knowledge and philosophical concepts based on the study of the influence of historical and cultural factors on the formation of science.	Oral survey (exam, theoretical assessment). Test, Situational problem solving	Information theory (demonstration of educational material, explanation, story)
LO 2	Uses professional vocabulary and specialized language constructions for the analysis, interpretation and presentation of information in scientific and professional activities.	Oral survey (exam, theoretical assessment). Test, Situational problem solving	Information theory (demonstration of educational material, explanation, story)
LO 3	Implements managerial, scientific and pedagogical functions based on the synthesis of psychological methods and pedagogical foundations.	Oral survey (exam, theoretical assessment). Test, presentation	Information theory (demonstration of educational material, explanation, story)
LO 4	Applies modern pedagogical approaches, teaching methods and educational technologies in the design and implementation of the educational process in higher education.	Oral survey (exam, theoretical assessment). Control work. Presentation. A case study. Multi-level tasks and assignments.	Information theory (demonstration of educational material, explanation, story)
LO 5	Designs the architecture, infrastructure, business processes of information systems and key scenarios of their functioning while coordinating all stages of product development.	Oral survey (exam, theoretical assessment). Control work. Presentation. A case study.	Search and creative teaching methods (observation, experience, experiment)
LO 6	Makes informed decisions based on a systematic analysis of information processes, structure and behavior of systems.	Oral survey (exam, theoretical assessment). Project defense, colloquium	Search and creative teaching methods (observation, experience, experiment)
LO 7	Administers network infrastructures for the effective functioning of the corporate	Oral survey (exam, theoretical assessment).	Search and creative teaching methods

	IT environment.		(observation, experience, experiment)
LO 8	Designs intelligent decision support systems based on complex modeling and analysis of big data using machine learning methods.	Project defense, colloquium	The method of independent work (reading, examination)
LO 9	Organizes secure data processing and storage in corporate information systems based on blockchain technologies.	Oral survey (exam, theoretical assessment).	Search and creative teaching methods (observation, experience, experiment)

8 Correlation of learning outcomes of the educational program with the labor functions of professional standards (if any)

Name of the professional standards used	Professions at level 7 of the SQF	Labor functions	Tasks	Learning outcomes for the educational program
Software Architect	Software Architect	Labor function 1 Analysis of software architecture creation possibilities and key scenarios	Skill 1: Assessment of the possibility of creating a project architecture and identification of key scenarios	LO 5 Designs the architecture, infrastructure, business processes of information systems and key scenarios of their functioning while coordinating all stages of product development.
		Labor function 2 Management of methods and interaction and modernization of software	Skill 1: Managing methods and methods of human-machine interaction	LO 9 Organizes secure data processing and storage in corporate information systems based on blockchain technologies.
Teacher (faculty) of organizations of higher and (or) postgraduate education	Developing students' required level of research skills	Labor Function 1: Training	Skill 1: Ensuring the required level of academic competence of students Skill 2: Ensuring the required level of professional competencies of students	LO 4 Applies modern pedagogical approaches, teaching methods and educational technologies in the design and implementation of the educational process in higher education.
		Labor Function 2: conducting scientific research;	Skill2: Developing students required level of research skills	
		Labor Function 4: specialization of young students;	Skill4: Promotion of social values among students	

Atlas of New Information Technology Professions	DevOps Engineer	Key competencies of the profession: – Interaction with all components of the product development process; – Organization of effective collaboration and synchronization of product development stages.	LO 5 Designs the architecture, infrastructure, business processes of information systems and key scenarios of their functioning while coordinating all stages of product development. LO 7 Administers network infrastructures for the effective functioning of the corporate IT environment.
Regional atlas of professions of the Karaganda region	Data Scientist	Skills: – Knowledge of machine learning algorithms, statistics, programming (often Python or R), ability to work with databases and data visualization tools.	LO 6 Makes informed decisions based on a systematic analysis of information processes, structure and behavior of systems. LO 8 Designs intelligent decision support systems based on complex modeling and analysis of big data using machine learning methods.
Personal competency requirements	Responsibility, strategic thinking, flexibility of thinking, analytical thinking, logical thinking, performance, result orientation, organization, creativity, problem solving		

9 Graduate model

GRADUATE MODEL			
"Software Architects" dated No. 569 / NK dated 11/10/2025 Teacher (faculty) of organizations of higher and (or) postgraduate education No. 591 dated 11/20/2023 Atlas of new professions and competencies in the Republic of Kazakhstan "DevOps Engineer" Regional atlases of new professions and competencies, Karaganda region. "Data Scientist"	Competencies (soft skills, digital skills)		
	Attributes of a graduate	Knowledge	Skills
	– High professionalism in the field of IT technology and business; – Emotional intelligence; – Adaptability to global challenges; – Leadership; – Entrepreneurial thinking; – Global citizenship; – Understanding the importance of principles and culture of academic integrity; – Communication competencies; – Learning skills necessary for independent continuation of further education.	– Theoretical foundations of information systems, architectures and research methodologies. – Modern computing paradigms: distributed systems, cloud platforms, micro- and server-oriented architectures. – Formalization and modeling: UML, BPMN, modeling theories, model verification. – Methods of data processing, storage, Big Data and streaming analytics; principles of ETL/ELT. – Algorithms and methods of machine learning, statistical data processing, evaluation of the quality of models. – Methodology of scientific research: experimental design, statistics, publication of results and scientific ethics. – Pedagogical foundations: teaching methods in IT education, development of curricula and assessment tools. – Information security, personal data protection and ethical aspects of IP. – IP lifecycle management, quality assurance and maintenance techniques.	– Formulate research objectives in the field of IP and design experimental research. – Conduct theoretical and empirical analysis, process and interpret research results. – Design and implement IP prototypes, build architecture and databases for research tasks. – Apply ML/statistical methods for data analysis and hypothesis validation. – Develop training programs, methodological materials and assessment tasks on IP. – To conduct lectures, seminars and practical exercises; to use modern educational technologies. – Publish the results in scientific publications, prepare conference reports and reports. – Organize research projects and lead students (scientific guidance, mentoring). – Ensure reproducibility of research: documentation, data and code management. – Apply the principles of information security and ethics in research and teaching.
Professional skills (hard skills)			

- | |
|---|
| <ul style="list-style-type: none">– Defines the essence and content of the processes of management, management, entrepreneurship and management;– Has the ability to establish communication and decision-making processes; has the ability to choose an effective leadership style and leadership, methods of managing groups, conflicts, and stress;– Possesses communication skills to communicate with colleagues and customers in the process of project development, as well as participates in the organization and management of projects;– Calculates and prepares a business plan and project analysis of an investment and business project;– Applies regulations for the organization of life cycle management of IT infrastructure and activities of IT enterprises. |
|---|

ОКУ ПРОЦЕСІНІН ЖОСПАРЫ ПЛАН УЧЕБНОГО ПРОЦЕССА PLAN OF EDUCATIONAL PROCESS																			
Білім беру бағдарламасының коды және атауы : 7M06136 - «Ақпараттық жүйелер» Код и наименование образовательной программы: 7M06136 - «Information Systems» Code and Name of the educational gram : 7M06136 - "Information Systems"																			
Модуль № / № модуль / Module №	Пәндік № / № дисциплины / Discipline №	ОКУ пәндерінің атауы НАИМЕНОВАНИЕ УЧЕБНЫХ ДИСЦИПЛИН NAME OF TEACHING DISCIPLINES	ОКУ пәндерінің коды Educational discipline code	Семестр / semester	Кредиттер саны Количество кредитов	Курстық жұмыс (жоба) Курсовая работа (project)	Білім алушылардың жұмыс уақыттың бөлігі сағатпен Бюджет рабочего времени (час) Budget of working time (hours)								Семестр бойынша бөлу Распределение по семестрам Distribution of semesters				Оқыту тілі (үш тілде білім беру бағдарламасы бойынша: оқыту тіліне, екінші тілде, ағылшын тілінде) / Язык обучения (для программы трехязычного образования: на языке обучения, на втором языке, на английском языке)
							Барлық сағат / Всего часов / Total hours	Барлық аудит. сағат Всего аудит. часов Total classroom hours	Д / ЛК / Lec	СПС / СПЗ / SPL	ЛС / ЛЗ / LC	ОБЖ / СРОП / IWS	БАӨЖ / СРО / IWS	1 КУРС YEAR		2 КУРС YEAR			
														1 сем / sem	2 сем / sem	3 сем / sem	4 сем / sem		
1	2	3	4	5	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Негізгі модуль / Базовый модуль / Basic module																			
Модуль №10/Module №1	1	Шет тілі (кәсіби) / Иностранный язык (профессиональный) / Foreign language (professional)	БП ЖК/ БД БК / BD UK	ІҮа (P) 5201-26 ІҮа (P) 5201-26 ІҮа (P) 5201-26	1	4		120	45		45		3	72	0+3+0				оқыту тілінде на языке обучения in the language of instruction
	2	Педагогика высшей школы/ Жоғары мектептің педагогикасы / Pedagogics of higher school	БП ЖК/ БД БК / BD UK	PVSh 5202-26 PVSh 5202-26 PVSh 5202-26	1	4		120	45	30	15		3	72	2+1+0				оқыту тілінде на языке обучения in the language of instruction
	3	Басқару психологиясы/ Психология управления/ Management psychology	БП ЖК/ БД БК / BD UK	PU5203-26 PU 5203-26 PU 5203-26	1	4		120	45	30	15		3	72	2+1+0				оқыту тілінде на языке обучения in the language of instruction
	4	Ғылым тарихы мен философиясы / История и философия науки / History and philosophy of science	БП ЖК/ БД БК / BD UK	IFN5204-26 IFN 5204-26 IFN 5204-26	1	4		120	45	30	15		3	72	2+1+0				ағылшын тілінде на английском языке in English
	5	Педагогикалық практика/ Педагогическая практика/ Pedagogical Practice		PedP 5205-26 PedP 5205-26 PedP 5205-26	2	4		120								4 апта/ 4 недели/ 4 week	0		оқыту тілінде на языке обучения in the language of instruction
Барлығы модуль бойынша / Итого по модулю / Total for module																			
Міндетті пәндер модуль/Модуль обязательных дисциплин /Module of compulsory disciplines																			
12 /Модуль №2 / Module №2	7	АЖ талдау, модельдеу және жобалау / Анализ, моделирование и проектирование ИС / Analysis, Design and Planning of IS	БП ЖК / ПД БК / MD UK	АМІРІС 6303-26 АМІРІС 6303-26 АМІРІС 6303-26	3	5		150	45	30	15		15	90				2+1+0	оқыту тілінде на языке обучения in the language of instruction
	8	Ақпараттық процестердің теориялық негіздері/ Теоретические основы информационных процессов/ Theoretical Foundations of Information Processes	БП ЖК / ПД БК / MD UK	ТОІР 5301-26 ТОІР 5301-26 ТОІР 5301-26	1	5		150	45	30	15		15	90	2+1+0				оқыту тілінде на языке обучения in the language of instruction

Модуль №	It жүйесіндегі жүйелер теориясы және жүйелік талдау / Теория систем и системный анализ в IT / Systems Theory and Systems Analysis in IT	БП ЖК / ПД БК / MD UK	TSSAIT 5302-26 TSSAIT 5302-26 TSSAIT 5302-26	2	5	150	45	30	15	0	45	270	3	3	2+1+0	оқыту тілінде на языке обучения in the language of instruction
9	Зерттеу практикасы / Исследовательская практика / Research Practice	БП ПД MD	IP 6305-26 IP 6305-26 IP 6305-26	4	13	390										оқыту тілінде на языке обучения in the language of instruction
Барлығы модуль бойынша / Итого по модулю / Total for module																
Интеллектуальды аппараттық жүйелер және үлкен деректерді талдау / Интеллектуальные информационные системы и анализ больших данных/Intelligent information systems and big data analysis																
9	Бағдарламалық инженерия / Программная инженерия / Software Engineering	БП ТК/ БД КВ / MD EC	PI 5201-26 PI 5201-26 PI 5201-26													оқыту тілінде на языке обучения in the language of instruction
10	Қолданбалы аппарат теориясы / Прикладная теория информации / Applied Information Theory	БП ТК/ БД КВ / MD EC	PTI 5201-26 PTI 5201-26 PTI 5201-26	2	5	150	45	30	15		15	90			2+1+0	оқыту тілінде на языке обучения in the language of instruction
11	Үлкен деректерді талдауға арналған машиналық оқыту / Machine Learning for Big Data Analysis	БП ТК/ БД КВ / MD EC	MOABD 5202-26 MOABD 5202-26 MOABD 5202-26													оқыту тілінде на языке обучения in the language of instruction
12	Үлкен деректерді өңдеу және талдау / Обработка и анализ больших данных / Big Data Processing and Analysis	БП ТК/ БД КВ / MD EC	OABD 5202-26 OABD 5202-26 OABD 5202-26													оқыту тілінде на языке обучения in the language of instruction
13	Аппараттық жүйелердің архитектурасы және инфраструктура / Architecture and Infrastructure of Information Systems	БП ТК/ БД КВ / MD EC	AIIS5203-26 AIIS5203-26 AIIS5203-26	2	5	150	45	30	15		15	90			2+1+0	оқыту тілінде на языке обучения in the language of instruction
14	Қоспорынның АТ инфрақұрылымы және қолданбалы жүйелері/ИТ-инфраструктура и прикладные системы предприятий./ IT Infrastructure and Enterprise Application Systems	БП ТК/ БД КВ / MD EC	PIPPS203-26 PIPPS203-26 PIPPS203-26													оқыту тілінде на языке обучения in the language of instruction
Барлығы модуль бойынша / Итого по модулю / Total for module																
Басқару жүйелері және жасанды интеллект / Системы управления и искусственный интеллект/Control systems and artificial intelligence																
15	Желілік технологияларды жобалау және басқару / Проектирование и управление сетевыми технологиями / Design and Management of Network Technologies	БП ТК / ПД КВ / MD EC	PIUST 5301-26 PIUST 5301-26 PIUST 5301-26	1	5	150	45	30	15		15	90			2+1+0	оқыту тілінде на языке обучения in the language of instruction

Барлығы модуль бойынша / Total for module	Ақпараттық жүйелердің мемлекеттік және корпоративтік модельдері/ Государственные и корпоративные модели ИС/ Governmental and Corporate Information System Models	БП ТК / ПД КВ / MD EC	ГКМІС 5301-26 ГКМІС 5301-26 ГКМІС 5301-26	3	5	150	45	30	15	15	90	2+1+0	оқыту тілінде на языке обучения in the language of instruction
17	Ақпараттық жүйелерге жасанды интеллект әдістері/ Методы искусственного интеллекта в ИС / Artificial Intelligence Methods in Information Systems	БП ТК / ПД КВ / MD EC	МІІІС 6302-26 МІІІС 6302-26 МІІІС 6302-26	3	5	150	45	30	15	15	90	2+1+0	оқыту тілінде на языке обучения in the language of instruction
18	Қоспормалы басқарудың заманауи жүйелері/ Современные системы управления предприятием/ Enterprise Management Systems	БП ТК / ПД КВ / MD EC	SSUP 6302-26 SSUP 6302-26 SSUP 6302-26										оқыту тілінде на языке обучения in the language of instruction
19	Ақпараттық жүйелердің қауіпсіздігін басқару/ Управление безопасностью информационных систем/ Information Systems Security Management	БП ТК / ПД КВ / MD EC	UBIS 6303-26 UBIS 6303-26 UBIS 6303-26	3	5	150	45	30	15	15	90	2+1+0	оқыту тілінде на языке обучения in the language of instruction
20	Ақпараттық жүйелердің деректерін басқару/ Управление данными информационных систем / Information Systems Data Management	БП ТК / ПД КВ / MD EC	UDIS 6303-26 UDIS 6303-26 UDIS 6303-26										оқыту тілінде на языке обучения in the language of instruction
Барлығы модуль бойынша / Total for module				15	0	450	135	90	45	0	270	6	

Талдау және математикалық модельдеу/Анализ и математическое моделирование

23	Имитационные моделирование бизнес-процессов/ Имитационное моделирование и оптимизация бизнес-процессов/ Simulation Modeling and Business Process Optimization	БП ТК / ПД КВ / MD EC	ІМОВР 6304-26 ІМОВР 6304-26 ІМОВР 6304-26										оқыту тілінде на языке обучения in the language of instruction
24	Ақпараттық жүйелерді цифрлық трансформациялаудың блокчейн технологиясы/ Технологии блокчейн в цифровой трансформации информационных систем/ Blockchain Technology in the Digital Transformation of Information Systems	БП ТК / ПД КВ / MD EC	ТВСТІС 6304-26 ТВСТІС 6304-26 ТВСТІС 6304-26	3	5	150	45	30	15	15	90	2+1+0	оқыту тілінде на языке обучения in the language of instruction

27	Шешім қабылдауды қолдау модельдері мен әдістері/ Методы поддержки принятия решений/ Models and Methods of Decision Support	БП ТК / ПД КВ / МД ЕС	ММРРР 6305-26 ММРРР 6305-26 ММРРР 6305-26	3	5	150	45	30	15	90	2+1+0	оқу тілінде на языке обучения in the language of instruction		
	28	Деректерді талдау және модельдеу/ Моделирование данных/ Modelling	БП ТК / ПД КВ / МД ЕС	АМД 6305-26 АМД 6305-26 АМД 6305-26								оқу тілінде на языке обучения in the language of instruction		
Барлығы модуль бойынша / Итого по модулю / Total for module				10	0	300	90	60	30	0	180	6		
Зерттеу қызметі / Исследовательская деятельность / Research activities														
29	Тағылымдамадан өту мен магистрлік диссертацияны орындауды қамтитын магистранттың ғылыми-зерттеу жұмысы Научно-исследовательская работа магистранта, включая прохождение стажировки и выполнение магистерской диссертации Research work of a master's student, including an internship and the completion of a master's thesis			1, 2, 3, 4	24	720					4 апта/ 4 недели/ 64 week	5 апта/ 5 недели/ 5 week	9 апта/ 9 недели/ 9 week	оқу тілінде на языке обучения in the language of instruction
	Барлығы модуль бойынша / Итого по модулю / Total for module				24	720								
Зерттеу қызметі / Исследовательская деятельность / Research activities														
Корытынды аттестаттау / Итоговой аттестации / Final certification														
30	Корытынды аттестаттау (Магистрлік диссертацияны ресімдеу және қорғау) (МДРҚ) Итоговая аттестация (Оформление и защита магистерской диссертации) (ОИЗМД) Final assessment (Preparation and defense of a master's thesis) (PDMT)	КА ИА FC		4	8	240						8 апта/ 8 недели/ 6 week	оқу тілінде на языке обучения in the language of instruction	
Барлығы модуль бойынша / Итого по модулю / Total for module				8	0	240								
БП (ЖК) цикл бойынша барлығы / Итого по циклу БД (БК) / Total for cycle BD (UC)				20										
БП (ТК) цикл бойынша барлығы / Итого по циклу БД (КВ) / Total for cycle BD (EC)				15										
БП (ЖК) цикл бойынша барлығы / Итого по циклу ПД (БК) / Total for cycle PD (UC)				15										
КП (ТК) цикл бойынша барлығы / Итого по циклу ПД (КВ) / Total for cycle PD (EC)				25										
Қосба тәжірибе/Профессиональная практика/Professional practice				13										
Магистранттың ғылыми-зерттеу жұмысы / Научно-исследовательская работа магистранта / Research work of Master student				24										
Корытынды аттестация / Итоговая аттестация / Final Certification				8										

ЭКСПЕРТНОЕ ЗАКЛЮЧЕНИЕ

на образовательную программу 7M06136 – «Информационные системы»
научно-педагогического направления АО «Казахский университет технологии и
бизнеса им. К. Кулажанова»

АО «Центр развития трудовых ресурсов», как представитель работодателя в сфере цифровизации социально-трудовой сферы, рассмотрело образовательную программу 7M06136 – «Информационные системы». Содержание программы соответствует современным требованиям к подготовке специалистов, способных выполнять исследование, проектирование, разработку, внедрение и сопровождение информационных систем.

Положительной стороной программы является сочетание теоретической, исследовательской и практической подготовки. Результаты обучения направлены на формирование компетенций в области системного анализа, моделирования, проектирования архитектуры информационных систем, обработки данных и применения современных программных технологий. Указанные компетенции востребованы при автоматизации государственных и корпоративных процессов, разработке интеграционных решений и сопровождении информационных систем.

В целях дальнейшего совершенствования рекомендуется регулярно актуализировать элективные дисциплины с учётом развития искусственного интеллекта, больших данных, облачных технологий и информационной безопасности.

На основании проведённой экспертизы образовательная программа 7M06136 – «Информационные системы» соответствует потребностям рынка труда и требованиям работодателей и рекомендуется к реализации в образовательном процессе.

Уполномоченное лицо

АО «Центр развития трудовых ресурсов»

Должность: Директор департамента
цифровой экосистемы Aleumet



(подпись)

/Ф.И.О./

2026 г.

ЭКСПЕРТНОЕ ЗАКЛЮЧЕНИЕ

на образовательную программу 7М06136 «Информационные системы»
АО «Казахский университет технологии и бизнеса»

ТОО «Jeti Aspan», осуществляющее деятельность в сфере развития потребительских сервисов, управления коммерческими проектами, цифровых решений, медиа и розничной торговли, рассмотрело образовательную программу 7М06138 - «Информационные системы». Образовательная программа направлена на подготовку квалифицированных специалистов в области проектирования, разработки, внедрения и сопровождения информационных систем и современных цифровых технологий.

Содержание образовательной программы соответствует требованиям Государственного общеобязательного стандарта высшего и послевузовского образования Республики Казахстан и современным потребностям рынка труда в сфере информационных технологий.

Особую практическую значимость представляют дисциплины, связанные с интеллектуальными информационными системами, анализом данных, машинным обучением, математическим моделированием и управлением информационными системами.

Выпускники программы обладают компетенциями в области разработки информационных систем, анализа данных, проектирования программных решений, применения современных информационных технологий и управления IT-проектами.

По результатам проведённой экспертизы установлено, что:

- структура образовательной программы соответствует современным требованиям высшего образования;
- содержание дисциплин обеспечивает формирование профессиональных компетенций, востребованных работодателями;
- образовательная программа ориентирована на практическую подготовку специалистов в области информационных технологий;
- результаты обучения соответствуют потребностям цифровой экономики и IT-отрасли.

Рекомендуется продолжить актуализацию элективных дисциплин с учётом современных тенденций развития искусственного интеллекта, анализа данных и цифровых технологий.

Вывод: Образовательная программа 7М06138 - «Информационные системы» соответствует требованиям рынка труда и рекомендуется к дальнейшей реализации в образовательном процессе.

Руководитель IT отдела ТОО «Jeti Aspan»  Акбаров Н.М.

Дата: 15 . 06 . 2026 г.



ЭКСПЕРТНОЕ ЗАКЛЮЧЕНИЕ

на образовательную программу 7М06136 «Информационные системы» научно-педагогического направления АО «Казахский университет технологии и бизнеса»

Образовательная программа 7М06136 «Информационные системы» научно-педагогического направления разработана в соответствии с требованиями Государственных общеобязательных стандартов высшего и послевузовского образования Республики Казахстан и отраслевых рамок квалификаций. Цель программы заключается в подготовке магистров, обладающих профессиональными, научно-исследовательскими и педагогическими компетенциями, способных осуществлять научную, образовательную и профессиональную деятельность в области информационных систем, цифровых технологий и искусственного интеллекта. Содержание образовательной программы обеспечивает формирование компетенций в области проектирования, разработки, внедрения и сопровождения информационных систем, анализа данных, математического моделирования, управления цифровыми процессами и проведения научных исследований. В структуру программы включены дисциплины, направленные на развитие исследовательских, аналитических, проектных и управленческих навыков магистрантов. В рамках актуализации программы усилены дисциплины, отражающие современные тенденции развития информационных технологий, включая «Машинное обучение для анализа больших данных» и «Проектирование и управление сетевыми технологиями», что способствует повышению конкурентоспособности выпускников и соответствует требованиям рынка труда и работодателей. Реализация образовательной программы обеспечивается квалифицированным профессорско-преподавательским составом, активно осуществляющим научную, научно-методическую и образовательную деятельность.

Модель компетенций выпускника включает универсальные и профессиональные компетенции, охватывающие научно-исследовательскую, педагогическую, аналитическую, проектную, организационно-управленческую и производственно-технологическую деятельность.

По результатам экспертизы установлено, что:

- образовательная программа соответствует требованиям ГОСО РК;
- структура и содержание программы реализованы на основе компетентностного подхода;
- дисциплины учебного плана отражают современное содержание подготовки в области информационных систем;
- учебно-методическое обеспечение и кадровый потенциал позволяют обеспечить качественную подготовку магистров.

С целью дальнейшего совершенствования программы рекомендуется ежегодно актуализировать содержание элективных дисциплин с учетом развития информационно-коммуникационных технологий, результатов научных исследований и потребностей работодателей.

Вывод: образовательная программа 7М06136 «Информационные системы» научно-педагогического направления рекомендуется к использованию в учебном процессе. Содержание программы соответствует современным требованиям науки, образования и рынка труда, способствует достижению заявленных результатов обучения и обеспечивает подготовку конкурентоспособных научно-педагогических кадров в области информационных систем и цифровых технологий.

директор

ТОО «SPECTRE SECURITY GROUP»

ТУРИН М. М.



ЭКСПЕРТНОЕ ЗАКЛЮЧЕНИЕ

Образовательная программа 7М06136 «Информационные системы»

Цель программы заключается в подготовке высококвалифицированных

Содержание образовательной программы направлено на формирование

В рамках актуализации программы усилено содержание дисциплин,

Реализация программы обеспечивается квалифицированным

По результатам экспертизы установлено, что образовательная программа

Рекомендуется регулярно актуализировать элективные дисциплины с

Вывод: образовательная программа 7М06136 «Информационные системы»



EXPERT OPINION

on the Educational Program 7M06136 – «Information Systems» Professional Master's Degree Program of JSC «Kazakh University of Technology and Business»

The educational program (hereinafter referred to as the EP) **7M06136 – «Information Systems»**, implemented within the professional master's degree track at JSC «Kazakh University of Technology and Business,” is a system of educational and methodological documents regulating the objectives, expected learning outcomes, content, conditions, and technologies of the educational process, as well as the quality assessment system for graduate training. The program complies with the regulatory and legal requirements of the Ministry of Science and Higher Education of the Republic of Kazakhstan.

The EP was developed and approved in accordance with the requirements of the State Mandatory Standards of Higher and Postgraduate Education (Order No. 2 of the Ministry of Science and Higher Education of the Republic of Kazakhstan dated July 20, 2022, as amended on February 20, 2023), as well as on the basis of sectoral qualification frameworks.

The purpose of the educational program **7M06136 – «Information Systems»** is to train highly qualified specialists in the field of Information Systems; to develop competencies that enable professional activities in various application areas of information systems; to prepare specialists for the research, development, implementation, and maintenance of information technologies and systems across different sectors of the economy; and to develop professional skills and competencies necessary for professional, scientific, and educational activities for the benefit of society.

The compulsory component of the professional educational program is aimed at developing managerial and communication competencies, including the ability to plan and organize teamwork using modern management methods and principles of business communication, as well as the ability to analyze and monitor the operational activities of organizational units.

The elective component of the educational program provides opportunities to expand and deepen professional training and acquire additional competencies, skills, and knowledge necessary to ensure graduates' competitiveness in accordance with labor market requirements.

The implementation of the educational program is supported by qualified academic staff engaged in scientific and methodological activities. Professional-cycle disciplines are taught by faculty members holding academic degrees and academic titles.

Theoretical and practical training within the educational program **7M06136 – «Information Systems»** is provided through the following modules:

- Basic Module;
- Module of compulsory disciplines;
- Intelligent Information Systems and Big Data Analytics;

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- Control Systems and Artificial Intelligence;
- Analysis and Mathematical Modeling.

Practical skills are developed through the following courses:

- Machine Learning for Big Data Analytics;
- Design and Management of Network Technologies.

Competency Model

The competency model of graduates of the educational program **7M06136 – «Information Systems»** consists of two major groups of competencies:

1. Universal Competencies

- General professional competencies;
- Socio-personal competencies;
- General cultural competencies.

2. Professional Competencies

- Analytical competencies;
- Design competencies;
- Production and technological competencies;
- Organizational and managerial competencies;
- Research competencies.

Professional competencies correspond to the areas and objectives of professional activity and include:

1. The ability to formulate ICT utilization strategies in various subject domains and forecast potential trends in the development of such strategies.
2. The ability to design information processes and systems using innovative technological tools.
3. Proficiency in modern information technologies for managerial decision-making and leadership, including planning, managing, and monitoring project requirements; assessing project complexity, risks, budgets, and timelines; supervising work schedules; and ensuring information system support throughout all stages of its life cycle.
4. The ability to apply and develop scientific research methods in the field of advanced technologies for the design and development of information systems in applied domains.

Findings of the Expert Review

Based on the conducted review, the following conclusions can be drawn:

- The educational program submitted for review complies with the State Educational Standards of the Republic of Kazakhstan.
- The structural components of the program are implemented using a competency-based approach.
- The curriculum disciplines logically reflect the content of the training profile **7M06136 – «Information Systems»**, taking interdisciplinary connections into account.
- Educational and methodological support includes course syllabi, course annotations, assessment materials, internship programs, and final state certification programs.

- The university and faculty environment provides favorable conditions for the development of graduates' general cultural competencies.

Recommendations for Improvement

Considering the continuous evolution of information and communication technologies, it is recommended to update approximately **10% of the elective courses** in accordance with the competencies required of graduates of the educational program **7M06136 – «Information Systems»** as well as current labor market needs and employer demands.

Final Conclusions

- The educational program is recommended for implementation in the educational process.
- The structure and content of the educational program **7M06136 – «Information Systems»** are focused on meeting labor market and employer needs, correspond to similar programs within the European Higher Education Area, and enable the achievement of the intended learning outcomes.

**Professor, PhD,
Niğde Ömer Halisdemir University,
Niğde, Türkiye**



Nezih Önal

Қорытынды: 7М06136 «Ақпараттық жүйелер» білім беру бағдарламасы оқу үдерісінде іске асыруға ұсынылады және бәсекеге қабілетті ғылыми-педагогикалық кадрларды сапалы даярлауды қамтамасыз етеді.

«AI- TREND SCHOOL»
ЖШС-нің директоры

Махметов Т.З