


«K.Kulazhanov Kazakh University of Technology and Business» JSC	EP 27/02-18-2025	
Educational program	Edition 4	

**EDUCATIONAL PROGRAM**

**7M06138 - Information systems**  
*Code and name of the educational program*

**Level: Master's (profile)**

Approved




By the Board of Directors of JSC  
 «K. Kulazhanov KazUTB» «02» 04 2025,  
 protocol No. 3

Recommended


by the Academic Council of JSC  
 «K. Kulazhanov KazUTB» «23» 03 2025,  
 protocol No. 8

Astana – 2025

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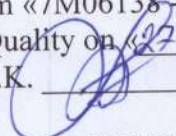
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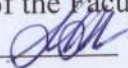
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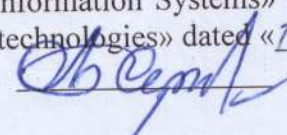
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## Preface

The educational program «7M06138 - Information Systems» was developed in accordance with the requirements of the State Mandatory Standard of Higher and Postgraduate Education, approved by Order No. 2 of the Minister of Science and Higher Education of the Republic of Kazakhstan dated July 20, 2022.

The educational program «7M06138 - Information Systems» was approved at the meeting of the Council on Academic Quality on «27» 03 2025, protocol No. 4  
Chairman Baibolova L.K. 






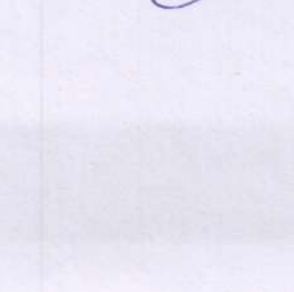

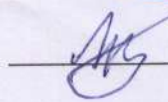
The educational program «7M06138 - Information Systems» was approved at the meeting of the Commission on Academic Quality of the Faculty on «Technology» 29.11 2024, protocol No. 2  
Chairman Zhunusova G.S. 


The educational program «7M06138 - Information Systems» was developed and discussed at the meeting of the department «Information technologies» dated «19» 11 2024, protocol No. 4  
Head of the department Serimbetov B.A. 

### Approval sheet

Educational program «7M06138 - Information Systems»  
(code and name of the EP)


**AGREED:**

Vice-Rector for Administrative Affairs		E.Askarbekov	" 27 " 03 2025 year
Head of Educational Programs Department		B.Bayadilova	" 27 " 03 2025 year
Director of «KazTelcom LLP»		M.M. Khodzhabaev	" 19 " 11 2024 year
Director of «Digital system Engineering LLP»		E.J. Zhantlesov	" 19 " 11 2024 year
Arta Software LLP. Product Director, Product Development Department.		Serikov Kuanysh Serikovich	" 19 " 11 2024 year
RSE on PCV "IVC Bureau of National Statistics. The Agency for Strategic Planning .planning and reforms" software engineer		Begimova Gaukhar Serikovna	" 19 " 11 2024 year
«Tax&Communicatons » LLP Director of Business Development		A.Talgatbekuly	" 19 " 11 2024 year
Master's student		Baitenov Akzhol Seitmugambetuly	" 19 " 11 2024 year

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### 1 Passport of the educational program

International Standard Classification of Education (ISCED) level	7
National Qualifications 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)	7M06138-Information systems
Educational program profile	Profile
Goal of the educational program	Formation of students' professional competencies to solve practical problems of digitalization, optimize processes and improve management efficiency in the context of widespread digitalization, training practice-oriented IT specialists capable of developing, implementing, and managing modern IP in various sectors of the economy using digital technologies
Completion criterion of an educational program	At least 60 academic credits, including all types of academic activities of a master's student
Language of instruction of the educational program	kazakh, russian
Distinctive features of the educational program	-
Partner University	-

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## 2 Qualification characteristics of the graduate of the educational program

Degree awarded	Master of Engineering and Technology in the educational program 7M06138-"Information Systems"
Field of professional activity	<p>Organizational and managerial:</p> <ul style="list-style-type: none"> <li>- managing the activities of IT departments and organizations involved in IT projects;</li> <li>- development and implementation of innovative forms of management of organizations and other branches of human activity;</li> </ul> <p>Scientific research:</p> <ul style="list-style-type: none"> <li>- scientific research in the field of information and communication technologies;</li> </ul> <p>Project information:</p> <ul style="list-style-type: none"> <li>- development and maintenance of software for various branches of human activity;</li> </ul> <p>Pedagogical:</p> <ul style="list-style-type: none"> <li>- - implementation of educational services in the field of information and communication technologies</li> </ul>
Types of professional activities	<p>Design and engineering;</p> <p>Production and technological;</p> <p>Organizational and managerial;</p> <p>Scientific research and experimental research</p>
Objects of professional activity	Enterprises and organizations of various forms of ownership, whose activities are related to the development, implementation and maintenance of information technologies and systems in various fields of human activity.
Functions of professional activity	<p>Software engineer, IT specialist, network administrator, automated control systems engineer, system programmer, university lecturer, specialist of the highest qualification level in accordance with job responsibilities for :</p> <ul style="list-style-type: none"> <li>- Administration of computer systems and networks;</li> <li>- Software product design and development;</li> <li>- Maintenance and testing of the software product;</li> <li>- Ensuring software and hardware security</li> </ul>

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### 3 Requirements for the content of the educational program

Name of cycles and disciplines	Workload in academic credits
<b>Theoretical training</b>	<b>39</b>
<b>The cycle of basic disciplines (BD)</b>	<b>10</b>
University component	6
Component of choice	4
<b>Cycle of profile disciplines (PD)</b>	<b>29</b>
University component	5
Component of choice	10
Industrial practicum	14
<b>Experimental research work of a master's student, including internship and master's project</b>	<b>13</b>
<b>Final assessment (Registration and defense of the master's project) (OizMP)</b>	<b>8</b>
<b>Total</b>	<b>60</b>


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#### 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)
Behavioral skills and personal qualities (Soft skills)	LO 1	Uses modern methods and technologies of scientific and professional communication in a foreign language in the field of professional activity
	LO 2	Manages IP information security by developing and implementing an information security policy, conducting IP audit and monitoring, applying modern cryptographic methods and security tools, and making informed management decisions in the field of integrated information security
	LO 3	Applies knowledge of psychology in solving managerial tasks and in planning professional and personal development
Digital competencies (Digital skills)	LO 4	Applies mathematical, intelligent models to support management decisions, analyzing and justifying alternative solutions in conditions of uncertainty, using methods of multi-criteria selection and optimization, integrating solutions into IP
Professional skills (Hard skills)	LO 5	Analyzes large amounts of data using machine learning methods, developing intelligent models to support decision-making, managing data in IP, using modern software tools and technologies to solve applied problems.
	LO 6	Applies mathematical and intellectual models to substantiate and optimize management decisions, using modern methods of analysis in conditions of uncertainty, using solutions based on blockchain technology to ensure transparency and security in information systems.
	LO 7	Analyzes information processes using the fundamental concepts of information theory, algorithmization, and coding theory, justifying the choice of methods for transmitting, processing, and storing information, applying theoretical models to improve the efficiency of information security


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	LO 8	<p>Conducts information-analytical and information-bibliographic work involving modern information technologies; collects and analyzes scientific and technical information, domestic and foreign experience on the subject of research</p>
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### 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 Uses modern methods and technologies of scientific and professional communication in a foreign language in the field of professional activity	Basic disciplines module	<p>Uses the techniques of logical analysis of scientific texts in a foreign language.</p> <p>Demonstrates knowledge of modern methods and technologies of professional communication in a foreign language</p> <p>He is proficient in modern management decision technologies</p> <p>Has knowledge of the principles of building enterprise management information systems</p>	Management
	LO2 Manages IP information security by developing and implementing an information security policy, conducting IP audit and monitoring, applying modern cryptographic methods and security tools, and making informed management decisions in the field of integrated information security			
	LO3 Applies knowledge of psychology in solving managerial tasks and in planning professional and personal development			
			Demonstrates the ability to apply knowledge of psychology for the purpose of self-knowledge and the knowledge of others.	Higher school pedagogy

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Digital competencies (Digital skills)	<p>LO4 Applies mathematical, intelligent models to support management decisions, analyzing and justifying alternative solutions in conditions of uncertainty, using methods of multi-criteria selection and optimization, integrating solutions into IP</p>	Analysis and mathematical modeling	Mastery of mathematical and algorithmic modeling methods in the analysis of engineering and natural science problems	Models and methods of decision support
	<p>LO6 Applies mathematical and intellectual models to substantiate and optimize management decisions, using modern methods of analysis in conditions of uncertainty, using solutions based on blockchain technology to ensure transparency and security in information systems.</p> <p>LO5 Analyzes large amounts of data using machine learning methods, developing intelligent models to support decision-making, managing data in IP, using modern software tools and technologies to solve applied problems.</p> <p>LO5 Analyzes large amounts of data using machine learning methods, developing intelligent models to support decision-making, managing data in IP, using modern software tools and technologies to solve applied problems.</p>	Data processing and FROM	<p>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.</p> <p>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.</p> <p>Processes and analyzes arrays of big data, uses machine learning algorithms to find new connections and patterns for building algorithmic models, using them to solve business, science, and everyday life problems. He is proficient in new research methods, in changing the scientific and scientific-industrial profile of his professional activity.</p>	<p>Blockchain technology in the digital transformation of information systems</p> <p>Big Data processing and analysis</p> <p>Data Science</p>
Professional skills (Hard skills)	LO7 Analyzes information processes using the	Control systems and	Organization of information processes at the physical and channel levels, the study of	Theoretical bases of

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<p>fundamental concepts of information theory, algorithmization, and coding theory, justifying the choice of methods for transmitting, processing, and storing information, applying theoretical models to improve the efficiency of information security</p> <p>LO2 Manages IP information security by developing and implementing an information security policy, conducting IP audit and monitoring, applying modern cryptographic methods and security tools, and making informed management decisions in the field of integrated information security</p> <p>LO5 Analyzes large amounts of data using machine learning methods, developing intelligent models to support decision-making, managing data in IP, using modern software tools and technologies to solve applied problems.</p> <p>LO8 Conducts information-analytical and information-bibliographic work involving modern information technologies; collects and analyzes scientific and technical information,</p>	artificial intelligence	modern methods and models for building information systems of various types.	information processes
			<p>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.</p> <p>Manages security processes, monitors, analyzes threats, responds to incidents, performs security audits and reviews.</p> <p>Has knowledge of data collection. Understands data collection processes and methods, including automated collection, user input, and integration of data from various sources.</p> <p>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 managing the capacity and performance of data storage.</p> <p>Conducts a search and analytical review of scientific literature. Defines research objectives and conducts experiments. Analyzes the research results.</p>


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	domestic and foreign experience on the subject of research		a master's student, including internship and master's project  (Registration and defense of the master's project)
		(Registration and defense of the master's project)	

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**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)								
				LO 1	LO 2	LO 3	LO 4	LO 5	LO 6	LO 7	LO 8	LO 9
<b>Cycle of basic disciplines</b>												
<b>University component/ Elective component</b>												
1	Foreign language (professional)	The purpose of the course is to acquire and improve competence in accordance with international standards of foreign language education, allowing the use of a foreign language as a means of communication in the intercultural, professional and scientific activities of the future master. The study of the discipline contributes to the training of highly qualified specialists who are able to compete in the labor market.	2	+								
2	Management	The purpose of the discipline forms a set of knowledge about management, develops specific directions for the implementation of various types of management activities. Uses forms of business and managerial communication in the team. Contributes to the simulation of the situation, develops and makes managerial decisions using management tools for solving practical problems, as well as modern technologies of	2		+							

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3	Higher school pedagogy	<p>effective influence on individual and group behaviour in the organisation.</p> <p>The purpose of the discipline is aimed at creating holistic ideas about the role of the human factor in management processes and its psychological mechanisms, and systematizing theoretical and methodological approaches to the management process, and developing a systematic vision of the problem of human management in an organization. The content of the discipline allows us to develop psychological tools for effective management of leadership in a modern organization, which is important in the system of basic professional training of future specialists.</p>	2									
4	Big Data processing and analysis	<p>The discipline studies key methods and technologies for working with large amounts of information, including distributed computing systems (Hadoop, Apache Spark) and data storage components (HDFS, HBase). Data analysis tools such as Pig and Hive, as well as the MapReduce model, are considered. Promotes the development of skills in developing algorithms for data analysis and processing, using Data Mining models, estimating the necessary resources to solve problems and analyzing hidden patterns in big data.</p>	4									





7	Information System Security Management	<p>The discipline studies methods of information system security management and data protection in a digital environment. The principles of cybersecurity, threat models, authentication methods, access control, cryptographic algorithms, and monitoring are considered. Network infrastructure protection technologies, vulnerability analysis, ensuring confidentiality, information integrity, information security standards, development and implementation of cyber defense strategies, risk management, audit, compliance with regulatory requirements, the use of threat analysis tools, and incident response in corporate systems are studied.</p>	5	+						
8	Data management of information systems	<p>The discipline studies methods of data management in IP, storage, processing, integration, protection. Data models, database architecture, ETL technologies, data quality management, optimization methods, and information recovery are considered. The principles of building data warehouses, big data processing, metadata management, distributed database technologies, cloud storage, application of data analysis and visualization tools, access control, information security, development of storage strategies, data usage in corporate, cloud systems are studied.</p>	5	+						




9	Models and methods of decision support	The discipline studies models and methods of decision support in complex systems and management tasks. Mathematical and computational models, multicriteria analysis methods, optimization approaches, game theory, Bayesian networks, and machine learning methods are considered. The algorithms of forecasting, risk analysis, decision-making in conditions of uncertainty, the use of data mining tools, scenario modeling, development of management strategies, automation of decision-making processes in various subject areas are studied.	5																
10	Blockchain technology in the digital transformation of information systems	The discipline studies the application of blockchain technology in the digital transformation of information systems. The basics of the blockchain architecture, consensus mechanisms, smart contracts and cryptographic methods of data protection are considered. Approaches to the integration of blockchain technologies into information systems are being studied to increase security, transparency and automation of processes. Examples of blockchain applications in various industries are analyzed, including digital asset management, tokenization, and evaluating the effectiveness of implementing blockchain solutions into organizational structures.	5																+

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

Learning Outcomes (LO) Number	Planned learning outcomes for the module	Assessment technologies (tools)	Methods of learning and teaching
LO 1	Uses modern methods and technologies of scientific and professional communication in a foreign language in the field of professional activity	Oral survey (exam, theoretical assessment). Test, Situational problem solving	Information theory (demonstration of educational material, explanation, story)
LO 2	Manages IP information security by developing and implementing an information security policy, conducting IP audit and monitoring, applying modern cryptographic methods and security tools, and making informed management decisions in the field of integrated information security	Oral survey (exam, theoretical assessment). Test, Situational problem solving	Information theory (demonstration of educational material, explanation, story)
LO 3	Applies knowledge of psychology in solving managerial tasks and in planning professional and personal development	Oral survey (exam, theoretical assessment). Test, presentation	Information theory (demonstration of educational material, explanation, story)
LO 4	Applies mathematical, intelligent models to support management decisions, analyzing and justifying alternative solutions in conditions of uncertainty, using methods of multi-criteria selection and optimization, integrating solutions into IP	Oral survey (exam, theoretical assessment). Control work. Presentation. Multi-level tasks and assignments.	Information theory (demonstration of educational material, explanation, story)
LO 5	Analyzes large amounts of data using machine learning methods, developing intelligent models to support decision making, managing data in IP, using modern software tools and technologies to solve applied problems.	Oral survey (exam, theoretical assessment). Control work. Presentation. A case study.	Search and creative teaching methods (observation, experience, experiment)
LO 6	Applies mathematical and intellectual models to substantiate and optimize management decisions, using modern methods of analysis in conditions of uncertainty, using solutions based on	Oral survey (exam, theoretical assessment).	Search and creative teaching methods (observation, experience, experiment)


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			experiment)
LO 7	<p>blockchain technology to ensure transparency and security in information systems.</p> <p>Analyzes information processes using the fundamental concepts of information theory, algorithmization, and coding theory, justifying the choice of methods for transmitting, processing, and storing information, applying theoretical models to improve the efficiency of information security</p>	Project defense, colloquium	<p>The method of independent work (reading, examination)</p> <p>Search and creative teaching methods (observation, experience, experiment)</p>
LO 8	<p>Conducts information-analytical and information-bibliographic work involving modern information technologies; collects and analyzes scientific and technical information, domestic and foreign experience on the subject of research</p>	Project defense, colloquium	<p>Search and creative teaching methods (observation, experience, experiment)</p>

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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 6 and or (7) of the SQF	Labor functions	Tasks	Learning outcomes for the educational program
Computer System Architecture Management	Information Systems Architect	Labor function 2 IP support	-	<p>LO 2 Manages IP information security by developing and implementing an information security policy, conducting IP audit and monitoring, applying modern cryptographic methods and security tools, and making informed management decisions in the field of integrated information security</p>
				<p>LO 4 Applies mathematical, intelligent models to support management decisions, analyzing and justifying alternative solutions in conditions of uncertainty, using methods of multi-criteria selection and optimization, integrating solutions into IP</p>

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Personal  
competence  
requirements

Responsibility, Strategic thinking, Flexibility of thinking, Analytical thinking, Logical thinking,  
Performance, Result orientation, Organization, Creativity, Problem solving



## 9 Graduate model

<b>GRADUATE MODEL</b>		
Competencies (soft skills, digital skills)		
Attributes of a graduate	knowledge	Skills
<ul style="list-style-type: none"> <li>- High professionalism in the field of IT technology and business;</li> <li>- Emotional intelligence;</li> <li>- Adaptability to global challenges;</li> <li>- Leadership;</li> <li>- Entrepreneurial thinking;</li> <li>- Global citizenship;</li> <li>- Understanding the importance of principles and culture of academic integrity;</li> <li>- Communication competencies;</li> <li>- Learning skills necessary for independent continuation of further education.</li> </ul>	<ul style="list-style-type: none"> <li>- IP concepts, models and architectures (client-server, cloud, SOA/microservices).</li> <li>- System analysis, business process and data modeling (BPMN, UML, ER).</li> <li>- Databases and repositories: modeling, SQL/NoSQL, transactions, indexes, sharding.</li> <li>- Integration and data exchange: API, web services, queues, event buses.</li> <li>- Data processing and Big Data: distributed systems, ETL/ELT, streaming processing.</li> <li>- Analytics and ML: Data Mining/ML methods, model quality assessment, visualization.</li> <li>- IP LC management: standards and methodologies (Agile, ITIL), testing and quality.</li> <li>- Information security: threat models, cryptography, IAM, compliance.</li> <li>- Reliability and operation: monitoring, performance, observability.</li> <li>- Research foundations: research methods, search and critical analysis of literature.</li> </ul>	<ul style="list-style-type: none"> <li>- Analyze requirements and model processes/data (BPMN, UML, ER).</li> <li>- Design the architecture of the IC and database (SOA/microservices, normalization, indexing).</li> <li>- Develop and integrate software, document and publish APIs.</li> <li>- Configure CI/CD, containerization, and orchestration (Docker, Kubernetes).</li> <li>- Plan projects (Agile/Scrum), manage quality and testing (unit/integration/e2e).</li> <li>- Build data pipelines (ETL/ELT), apply ML/analytics, make dashboards.</li> <li>- Provide information security: authentication, authorization, encryption, compliance with requirements.</li> <li>- Operate and maintain: monitoring, incidents, performance and cost optimization.</li> <li>- Conduct research, prepare</li> </ul>

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			reports/publications, prototype (PoC/MVP). – Communicate effectively, work in a team, manage risks, deadlines, and budget.
Professional skills (hard skills)			
<ul style="list-style-type: none"> <li>-Defines the essence and content of the processes of management, management, entrepreneurship and management;</li> <li>- 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;</li> <li>-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</li> <li>-Calculates and prepares a business plan and project analysis of an investment and business project</li> <li>- Applies regulations for the organization of life cycle management of IT infrastructure and activities of IT enterprises</li> </ul>			

ОКУ ПРОЦЕСІНІН ЖОСПАРЫ  
 ПЛАН УЧЕБНОГО ПРОЦЕССА  
 PLAN OF EDUCATIONAL PROCESS

Білім беру бағдарламасының коды және атауы: 7M06138 - «Ақпараттық жүйелер»  
 Код и наименование образовательной программы: 7M06138 - «Информационные системы»  
 Code and Name of the educational program : 7M06138 - "Information Systems"

Модуль №1/Module №1	Пәндік № / № дисциплины / Discipline №	Оқу пәндерінің атауы НАИМЕНОВАНИЕ УЧЕБНЫХ ДИСЦИПЛИН NAME OF TEACHING DISCIPLINES	Оқу пәндерінің тәуелді компоненті / тауелді компоненті / Educational discipline component / component of choice	Оқу пәндерінің коды Код учебной дисциплины Educational discipline code	Семестр / semester	Кредиттер саны Количество кредитов Number of credits	Курстық жұмыс (жұба) Курсовая работа (project)	Білім алушылардың жұмыс уақытының бюджеті Budget of working time (hours)											Семестр бойынша бөлу Распределение по семестрам Distribution of semesters	Оқыту тілі (үш тілде білім беру бағдарламасы бойынша: оқыту тілінде, екінші тілде, ағылшын тілінде) / Язык обучения (для программы трехязычного образования: на языке обучения, на втором языке, на английском языке)
								Барлық сағат / Всего аудит. часов Total classroom hours	Д / ЛК / Lec	СПС / СПЗ / SPL в том числе / including	ЛС / ЛЗ / LC	ОБӨЖ / СПӨТ / WST	БАӨЖ / СРО / WVS	1 сем / sem	2 сем / sem	1 КҰРС YEAR				
<b>Негізгі модуль / Базовый модуль / Basic module</b>																				
1	1	Басқару психологиясы / Психология управления / Management Psychology	БП ЖК/ БД ВК / BD CK	PU 5201-25 5201-25	1	2		60	30	15	15	15	15	15	15	15	15	1+1+0	оқыту тілінде на языке обучения in the language of instruction	
2	2	Шет тіл (өзбет) / Иностранный язык (профессиональный) / Foreign language (professional)	БП ЖК/ БД ВК / BD CK	Іуа 5202-25 Іуа 5202-25 Іуа 5202-25	1	2		60	30	30	30		15	15	15	15	15	0+2+0	оқыту тілінде на языке обучения in the language of instruction	
3	3	Менеджмент / Менеджмент / Management	БП ЖК/ БД ВК / BD CK	Men 5203-25 Men 5203-25 Men 5203-25	1	2		60	30	15	15		15	15	15	15	15	1+1+0	ағылшын тілінде на английском языке in English	
<b>Барлығы модуль бойынша / Итого по модулю / Total for module</b>								120	60	15	45	0	30	30	30	30	6	0		
<b>Деректерді өңдеу және АЖ/ Обработка данных и ИС/Data processing and FROM</b>																				
4	4	Үлкен деректерді өңдеу және талдау/ Обработка и анализ больших данных / Big Data processing and analysis	БП ТК/ БД КВ / BD EC	YDOP 5201-25 OABD 5201-25 BDPA 5201-25	1	4		120	45	30	15		15	60	60	60	2+1+0	оқыту тілінде на языке обучения in the language of instruction		
5	5	DataScience/ DataScience/ DataScience	БП ТК/ БД КВ / BD EC	DS 5201-25 DS 5201-25 DS 5201-25																
<b>Барлығы модуль бойынша / Итого по модулю / Total for module</b>								120	45	30	15	0	15	60	60	3				
<b>Басқару жүйелері және жасанды интеллект / Системы управления и искусственный интеллект / Control systems and artificial intelligence</b>																				
7	7	Ақпараттық процесстерді теориялық негіздері/ Теоретические основы информационных процессов/	БП ЖК / ПД ВК / PD EK	AUTNS301-25 TOIP 5301-25 TWRP5301-25	1	5		150	45	30	15		15	90	90	2+1+0	оқыту тілінде на языке обучения in the language of instruction			
8	8	Ақпараттық жүйелердің қауіпсіздігін басқару/ Управление безопасностью информационных систем/ Information System Security Management	БП ТК / ПД КВ / PD EC	AJKB5301-25 5301-25 ISSM 5301-25																
<b>Барлығы модуль бойынша / Итого по модулю / Total for module</b>								150	45	30	15	0	15	90	90	2+1+0				

Модуль / Module №5	Акпараттык жүйелердин деректерин баскаруу / Управление данными информационных систем / Data management of information systems	БП ТК / ПД КВ / РД ЕС	AJDB 5301-25 UDIS 5301-25 DMIS 5301-25	Талдау және математикалык моделдер / Анализ и математическое моделирование										на языке обучения in the language of instruction											
				1	5	150	45	30	15	15	30	0	30		180	6									
Барлығы модуль бойынша / Итого по модулю / Total for module													10	0	300	90	60	30	0	30	0	30	180	6	
10	Шешим кабылдауу колдуу модельдери мен адистер / Модели и методы поддержки принятия решений / Models and methods of decision support	БП ТК / ПД КВ / РД ЕС	SHKKMA 5302-25 MMPPRS 5302-25 MMDS 5302-25																						
				1	5	150	45	30	15	15	30	0	30	90	2+1+0	окуту тилинде на языке обучения in the language of instruction									
11	Акпараттык жүйелерди цифрлык трансформациялауу блокчейн технологиясы / Технология блокчейн в цифровой трансформации информационных систем / Blockchain technology in the digital transformation of information systems	БП ТК / ПД КВ / РД ЕС	AJCTBT 5302-25 TBCTIS 5302-25 VTDTIS 5302-25											14 апта / 14 недели / 14 week											
12	Өндүрүштүк практика / Производственная практика / Manufacturing practice	БП ПД РД	OP 5302-25 PP 5302-25 MP 5302-25											0											
Барлығы модуль бойынша / Итого по модулю / Total for module													19	570	45	30	15	0	15	0	15	90	3		
Зерттеу кызмат / Исследовательская деятельность / Research activities																									
13	Тагылдамдан оту мен магистрлик жобаны орындауу камтитын магистранттын эксперименттик-зерттеу жумасы (МЭЭЖ) / Экспериментально-исследовательская работа магистранта, включая прохождение стажировки и выполнение магистерского проекта / Experimental research work of a master's student, including internship and master's project													8 апта / 8 недели / 8 week											
				1,2	13	300											5 апта / 5 недели / 5 week								
Барлығы модуль бойынша / Итого по модулю / Total for module													13	390											
Корытынды аттестаттуу / Итоговой аттестации / Final certification																									

Модуль №6/Module №6	Корытылды аттестаттау (Магистрлік жұбаны рәсімдеу және қорғау) (МЖРК) Итоговая аттестация (Оформление и защита магистерского проекта) (ОИЗМП) Final assessment (Registration and defense of the master's project) (OIZMP)	КА ИА FC	2	8	240											8 апта/ 8неделі/ 8week	оқыту тілінде на языке обучения in the language of instruction
	Барлығы модуль бойынша / Итого по модулю / Total for module			8	240												
<b>БАРЛЫҒЫ МОДУЛЬДАР БОЙЫНША / ИТОГО ПО МОДУЛЯМ / TOTAL FOR MODULES</b>																	
				60	1650	240	135	105	0	90	360						

## ЭКСПЕРТНОЕ ЗАКЛЮЧЕНИЕ

на образовательную программу 7М06138 - «Информационные системы»  
профильного направления АО «Казахский университет технологии и бизнеса»

Образовательная программа (далее ОП) 7М06138 - «Информационные системы» профильного направления, реализуемая в АО «Казахский университет технологии и бизнеса» представляет собой систему учебно-методических документов, регламентирующих цели, ожидаемые результаты, содержание, условия и технологии реализации образовательного процесса, систему оценки качества подготовки выпускника и соответствует нормативно-правовым актам МНВО РК.

ОП разработана и утверждена на основании требований Государственных общеобязательных стандартов высшего и послевузовского образования (Приказ МНВО РК от 20.07. 2022 г. № 2 (с изменениями и дополнениями на 20.02. 2023 года), а также на основе отраслевых рамок квалификации.

Целью образовательной программы 7М06138 - «Информационные системы» является: подготовка высококвалифицированных специалистов по направлению «Информационные системы»; формирование у обучающихся компетенций, обеспечивающих его профессиональную деятельность в разных отраслях применения информационных систем; подготовка специалистов по исследованию, разработке, внедрению и сопровождению информационных технологий и систем в разных отраслях экономики; формирование профессиональных навыков и компетенций, необходимых для профессиональной, научной и образовательной деятельности во благо общества.

Обязательная часть профессиональной образовательной программы направлена на формирование управленческих, коммуникативных компетенций, состоящих из умения планировать и организовывать работу коллектива, используя современный менеджмент и принципы делового общения; анализа и контроля производственной деятельности подразделения. Вариативная часть образовательной программы дает возможность расширения и углубления подготовки и получения дополнительных компетенций, умений и знаний, необходимых для обеспечения конкурентоспособности выпускника в соответствии с требованиями рынка труда.

Реализация образовательной программы обеспечивается квалифицированными педагогическими кадрами, занимающимися научной и научно-методической деятельностью. К преподаванию дисциплин профессионального цикла привлечены преподаватели, которых имеют ученые степени и ученые звания.

Теоретическую и практическую подготовку по образовательной программе 7М06138 - «Информационные системы» обеспечивают дисциплины модуля «Обработка данных и ИС», «Системы управления и искусственный интеллект», «Анализ и математическое моделирование».

Практические навыки обеспечивают дисциплины: Технология блокчейн в цифровой трансформации информационных систем.

Модель компетенций магистра ОП 7М06138 - «Информационные системы» складывается из двух укрупненных наборов компетенций:

1. Универсальные: общепрофессиональные и социально-личностные, общекультурные;
2. Профессиональные: аналитические, проектные, производственно-технологические, организационно-управленческие, научно-исследовательские.

Профессиональные компетенции соответствуют областям и задачам профессиональной деятельности и включают:

1. Способность к формированию стратегии использования ИКТ в различных предметных областях и прогнозированию вероятных тенденций развития этих стратегий.

2. Способность проектировать информационные процессы и системы с использованием инновационных инструментальных средств.

3. Владение современными информационными технологиями управленческих решений и обладает способностями руководителя: планировать, управлять и контролировать выполнение требований, выполнять оценки степени трудности, рисков, бюджета, и времени в течение выполнения проекта, осуществлять контроль рабочего графика, осуществлять сопровождение информационной системы на всех этапах ее жизненного цикла.

4. Способность использовать и развивать методы научных исследований в области новых технологий проектирования и разработки информационных систем в прикладных областях.

На основании приведенной экспертизы можно сделать следующие выводы:

- представленная к рассмотрению программа отвечает требованиям ГОСО РК;
- структурные элементы программы реализуются с учетом компетентностного подхода;
- дисциплины учебного плана логически отражают содержание профиля подготовки 7М06138 - «Информационные системы» с учетом междисциплинарных связей;
- Учебно-методическое обеспечение представлено рабочими программами дисциплин, аннотациями рабочих программ дисциплин, фондами оценочных средств дисциплин, разработанными программами практик и итоговой государственной аттестации;
- характеристика среды вуза и факультета позволяют обеспечить развитие общекультурных компетенций выпускника.

**Предложения по совершенствованию образовательной программы:** учитывая постоянную динамику изменения методов и средств информационно-коммуникационных технологий, рекомендуется обновлять элективные дисциплины на 10% в соответствии с компетенциями выпускника по ОП 7М06138 - «Информационные системы» и требованиями рыночной экономики и спросом работодателей.

**Выводы:**

- Образовательная программа рекомендуется к использованию в учебном процессе;
- Структура и содержание образовательной программы 7М06138 «Информационные системы» имеет направленность на удовлетворение потребностям рынка труда и работодателей, соответствует аналогичным программам бакалавриата Европейского образовательного пространства и позволяет достичь ожидаемых результатов обучения.

Исполнительный директор ТОО «Научно-исследовательский институт естественно-технических наук»



А. Еремекбаев А. Еремекбаев

Дата: 11.05.2025г