

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

EDUCATIONAL PROGRAM

7M06137 «IT management»

Level: Master's (scientific and pedagogical, 2 years)

Approved

by the Board of Directors of JSC
«K. Kulazhanov KazUTB»

"13" 2026 protocol No. 4



Recommended

by the Academic Council of JSC
«K. Kulazhanov KazUTB»

"22" 02 2026 protocol No. 7

Astana – 2026

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Preface

The educational program 7M06137 "IT Management" was developed in accordance with the State Mandatory Standard of Higher Education / 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 the professional standard: "Professional standard: for teachers (faculty) of organizations of higher and (or) postgraduate education" No. 591 dated 11/20/2023; "Business analyst", "System Analyst" No. 770/NK December 6, 2024; Atlas of new professions and competencies in the Republic of Kazakhstan "Product manager"; Regional atlases new professions and competencies of the Karaganda region "Data Scientist".

The Educational Program 7M06137 – «IT management» was approved at the meeting of the Internal Quality Assurance Council on 08.01.2024 Minutes No. 3.

Chairperson [Signature] Askarbekov E.B.

The Educational Program 7M06137 – «IT management» was reviewed and approved at the meeting of the Faculty

Quality Assurance Commission on 08.12.2024 Minutes No. 3/1.

Chairperson [Signature] Serimbetov B.A.

The Educational Program 7M06137 – «IT management» was developed and discussed at the meeting of the Department of Information Technologies on 08.12.2024 Minutes No. 5.

Head of the Department [Signature] Abdukarimova A.A.

Approval sheet

Educational program 7M06137 «IT management»
(code and name of the EP)

AGREED:

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A. Talgatbekuly

"10" "12" 2025 year

Master's student



D. Zhidebayeva

"10" "12" 2025 year

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)	7M06137 – «IT management»
Educational program profile	Scientific and pedagogical
Goal of the educational program	Preparation of specialists in IT - management capable of research, pedagogical, and managerial activities in the field of information technology and digital transformation
Completion criterion of an educational program	At least 120 academic credits, including all types of student's academic activities
The language of instruction of the EP	Russian, Kazakh
Distinctive features of the EP	Accreditation of the OP by the International Accreditation Agency for Quality Assurance of Education IAAR
Partner University	-

2 Qualification characteristics of the graduate of the educational program

Degree awarded	Master of Engineering and Technology in the educational program 7M06137 – «IT Management»
Field of professional activity	Organizational and managerial: - managing the activities of HR departments and organizations involved in HR projects; - development and implementation of innovative forms of management of organizations, etc. - 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: - implementation of educational services in the field of information and communication technologies
Types of professional activity	Design and engineering; Production and technological; Organizational and managerial; Scientific research and experimental research.
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 (labor functions)	- Analytical support for the development of an organization's change strategy; - Business analysis management; - Planning and monitoring of system analysis within the framework of the system/product lifecycle or lifecycle stage - specialization of young students; - 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 7M06137 «IT management»

Competence map of the educational program	Learning Outcome Code	Learning Outcome (according to Bloom's Taxonomy)
Behavioral skills and personality traits (Softskills)	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	Designs the architecture of information systems based on business requirements, software engineering principles and continuous monitoring of all stages of the life cycle.
	LO9	Ensures the security of information processes and systems based on data analysis using storage and processing models in blockchain technologies.
Professional skills (Hardskills)	LO5	Implements IT strategies and projects for the development of information systems based on business process analysis to ensure market demand and viability of IT products.
	LO7	Manages network technologies and Internet communications.
	LO8	Analyzes big data using machine learning, artificial intelligence, and data modeling techniques.

5 Learning outcomes of the educational program and modules

	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 personality traits (Softskills)	LO1 Analyzes scientific knowledge and philosophical concepts based on the study of the influence of historical and cultural factors on the formation of science.	The module of basic disciplines	As a result of the training, students master the skills of academic and professional communication in a foreign language. The basics of philosophical thinking, higher school pedagogy and management psychology are being mastered, which contributes to the development of critical thinking and the ability to make informed managerial decisions. They demonstrate a willingness to teach, research, and effectively interact in a multidisciplinary environment.	Foreign language (professional)
	LO2 Uses professional vocabulary and specialized language constructions for the analysis, interpretation and presentation of information in scientific and professional activities.			History and philosophy of science
	LO3 Implements managerial, scientific and pedagogical functions based on the synthesis of psychological methods and pedagogical foundations.			Higher school pedagogy
	LO4 Applies modern pedagogical approaches, teaching methods and educational technologies in the design and implementation of the educational process			Management Psychology
Professional skills (Hardskills)	LO5 Implements IT strategies and projects for the development of information systems based on business process analysis to ensure market demand and viability of IT products.	Enterprise management systems, methodologies and standards module	Applies modern approaches and tools of IT management for strategic management of information technologies, data, security and digital innovations in the organization.	IT Consulting Modern Methodologies and Standards of IT Management Strategic Management of Information Technologies IT - Management

Digital competencies (Digital skills)	LO 6 Designs the architecture of information systems based on business requirements, software engineering principles and continuous monitoring of all stages of the life cycle.	Module of compulsory disciplines	Applies modern approaches and tools of IT management for strategic management of information technologies, data, security and digital innovations in the organization.	Enterprise Resource Planning Systems	
				Effective Management Models	
		Module of compulsory disciplines		Applies modern approaches and tools of IT management for strategic management of information technologies, data, security and digital innovations in the organization.	IT Project and Change Management
					Analysis, Design and Planning of IS
	LO7 Manages network technologies and Internet communications.	Enterprise management systems, methodologies and standards module	Applies modern approaches and tools of IT management for strategic management of information technologies, data, security and digital innovations in the organization.	Software Engineering	
				Applied Information Theory	
		Data analysis and information technology management		It uses modern information, network, and intelligent technologies to develop, manage, and improve digital systems, data analysis, and support an organization's business processes.	Information Systems Data Management
					Design and Management of Network Technologies
	LO8 Analyzes big data using machine learning, artificial intelligence, and data modeling techniques.	Data analysis and information technology management	It uses modern information, network, and intelligent technologies to develop, manage, and improve digital systems, data analysis, and support an organization's business processes.	Internet Communications Management	
				Machine Learning for Big Data Analysis	
				Big Data Processing and Analysis	

Professional skills (Hardskills)		Enterprise management systems, methodologies and standards module	Applies modern approaches and tools of IT management for strategic management of information technologies, data, security and digital innovations in the organization.	Deep Machine Learning and Artificial Intelligence Models and Methods of Decision Support
				Models and Methods of Neural Networks
Digital competencies	LO 9 Ensures the security of information processes and systems based on data analysis using storage and processing models in blockchain technologies.	Enterprise management systems, methodologies and standards module	Applies modern approaches and tools of IT management for strategic management of information technologies, data, security and digital innovations in the organization.	Information Systems Security Management
				Theory of Blockchain Technology

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	Generated learning outcomes (codes)								
				LO 1	LO 2	LO 3	LO 4	LO 5	LO 6	LO 7	LO 8	LO 9
The cycle of basic disciplines (BD)												
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	4	+								

The cycle of profile disciplines (PD)

11	Analysis, Design and Planning of IS	This discipline focuses on the modeling and design of Information Systems (IS) for effective data and process management. The course explores the concepts of systems analysis and IS architecture. Upon completion, students will be able to apply modeling and design methods to optimize data management and business processes.	5						+	
12	IT Project and Change Management	This discipline focuses on studying methods and approaches to IT project management, as well as the principles of change management during the implementation of new technologies. The course covers modern methodologies and international standards for both project and change management. As a result, students will be able to apply these frameworks to optimize organizational processes.	5					+		
13	Deep Machine Learning and Artificial Intelligence	This discipline is focused on the study of deep learning methods using multi-layer neural networks to solve complex tasks. The course covers various architectures, including Convolutional Neural Networks (CNNs), Recurrent Neural Networks (RNNs), and Transformers. As a result, students will be able to apply deep learning techniques and diverse neural network architectures to solve practical, real-world problems.	5						+	

		approaches, game theory, Bayesian networks, and machine learning methods. As a result, students will gain mastery in applying these models and methods to support effective decision-making processes.																	
17	Effective Management Models	This discipline focuses on the principles, methods, and models of organizational management aimed at improving efficiency and achieving strategic goals. The course covers modern technologies for managerial decision-making and the principles of designing Enterprise Management Information Systems (MIS). As a result, students will be able to apply effective management models and leverage modern tools to enhance organizational performance.	5												+				
18	Enterprise Resource Planning Systems	This discipline is focused on the principles and methods of ERP (Enterprise Resource Planning) system implementation for the automation and integration of enterprise business processes. The course explores approaches to resource management and operations optimization aimed at improving organizational efficiency. As a result, students will be able to apply ERP implementation methodologies and optimize business processes to enhance overall organizational performance.	5												+				

[illegible]

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	Analyzes scientific knowledge and philosophical concepts based on the study of the influence of historical and cultural factors on the formation of science.	Information theory (demonstration of educational material, explanation, story)	Oral survey (exam, theoretical assessment). Test, Situational problem solving
LO 2	Uses professional vocabulary and specialized language constructions for the analysis, interpretation and presentation of information in scientific and professional activities.	Information theory (demonstration of educational material, explanation, story)	Oral survey (exam, theoretical assessment). Test, Situational problem solving
LO 3	Implements managerial, scientific and pedagogical functions based on the synthesis of psychological methods and pedagogical foundations.	Information theory (demonstration of educational material, explanation, story)	Oral survey (exam, theoretical assessment). Test, presentation
LO 4	Applies modern pedagogical approaches, teaching methods and educational technologies in the design and implementation of the educational process in higher education.	Information theory (demonstration of educational material, explanation, story)	Oral survey (exam, theoretical assessment). Control work. Presentation. A case study. Multi-level tasks and assignments.
LO 5	Implements IT strategies and projects for the development of information systems based on business process analysis to ensure market demand and viability of IT products.	Search and creative teaching methods (observation, experience, experiment)	Oral survey (exam, theoretical assessment). Control work. Presentation. A case study.
LO 6	Designs the architecture of information systems based on business requirements,	Search and creative teaching methods (observation, experience, experiment)	Oral survey (exam, theoretical assessment).

	software engineering principles and continuous monitoring of all stages of the life cycle.			Project defense, colloquium
LO 7	Manages network technologies and Internet communications.	Search and creative experience, experiment)	teaching methods (observation, experience, experiment)	Oral survey (exam, theoretical assessment).
LO 8	Analyzes big data using machine learning, artificial intelligence, and data modeling techniques.	The method of independent work (reading, examination)	learning methods (observation, experience, experiment)	Project colloquium defense,
LO 9	Ensures the security of information processes and systems based on data analysis using storage and processing models in blockchain technologies.	Search and creative experience, experiment)	learning methods (observation, experience, experiment)	Oral survey (exam, theoretical assessment).

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
System Analyst	System Analyst	Labor function 1: Planning and monitoring of system analysis within the framework of the system/product lifecycle or lifecycle stage	Skill 5: Monitoring and coordination of analytical work in an IT project	LO 6 Designs the architecture of information systems based on business requirements, software engineering principles and continuous monitoring of all stages of the life cycle. LO 8 Analyzes big data using machine learning, artificial intelligence, and data modeling techniques.

Teacher (faculty) of organizations of higher and (or) postgraduate education	lecturer, senior lecturer/senior lecturer in the field of education, EVPO.	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;	Skill 1: Scientific and methodological support of macro-processes of EVPO	
		Labor Function 4: specialization of young students;	Skill 1: Promotion of social values among students	
	"Business analyst in the field of ICT"	Labor function 1: Business analysis management.	Skill 2: Managing Business Analysis	LO 8 Analyzes big data using machine learning, artificial intelligence, and data modeling techniques.
Business Analyst		Labor function 3: Analytical support for the development of an organization's change strategy.	Skill 1: Analytical support for the development of an organization's change strategy	LO 5 Implements IT strategies and projects for the development of information systems based on business process analysis to ensure market demand and viability of IT products.
Atlas of new professions, Information technology	Product-manager		Key competencies of the profession: • organization of market research to	LO 5 Implements IT strategies and projects for the development of information systems based on business process analysis to ensure market demand and viability of IT products.

			assess the potential demand for a particular product, as well as the search and identification of relevant market demands; • generation of ideas and ways to improve IT products; • ensuring the market viability of the product by maintaining interest in it.	
Regional atlases of new professions and competencies, Karaganda region	Data Specialist		Skills: knowledge of machine learning algorithms, statistics, programming (often Python or R), ability to work with databases and data visualization tools.	LO 8 Analyzes big data using machine learning, artificial intelligence, and data modeling techniques.
Personal competence requirements	Stress tolerance, critical thinking, sociability, rationality, pragmatism, readiness for self-development, authority, emotional balance.			

9. Graduate model

GRADUATE MODEL			
"System Analyst" No. 770 / NK dated 06.12.2024 "Business Analyst" dated No. 770 / NK dated 06.12.2024 Teacher (faculty) of organizations of higher and (or) postgraduate education Mapaduction No. 591 dated 11/20/2023 Atlas of new professions and competencies in the Republic of Kazakhstan "Product Manager" 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.	- IT project management, IT resource management, and digital transformation; - Information systems, IT infrastructure, and network technologies; - Data management, Big Data, AI, and machine learning; - Information security and IT risk management; - Strategic management and business analysis; - Modern research methods in the field of IT; - Pedagogy, teaching methodology, and digital educational technologies; - IT team management and professional development of specialists.	- Develops IT strategies, projects, information systems, and teaching and learning materials. - Plans IT projects, digital transformation, and research activities. - Manages IT projects, resources, teams, and digital processes. - Analyzes business processes, data, IT solutions, and research findings. - Organizes the implementation of information technologies and the educational process. - Applies modern Big Data, AI, machine learning, and digital learning technologies. - Evaluates the effectiveness of IT solutions, projects, and educational technologies. - Conducts scientific research and interprets research findings.
	Professional skills (hard skills)		
	- 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 of communicating with colleagues and customers in the process of project development, and also 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 managing the processes of the IT infrastructure lifecycle and the activities of IT enterprises.		

TYPICAL CURRICULUM

[illegible]

Модуль / Module № 3		Үлкен деректерді оңдау және талдау Обработка и анализ больших данных Big Data Processing and Analysis	БП (ТК) БД (КВ) БД (ЕС)	OABD 5202-26 OABD 5202-26 OABD 5202-26	2	5	150	45	30	15	0	15	90	Аппараттық технология Информационные технологии Information technology	+	2 + 1 + 0	Емтқан Экзамен Examination	Басқа Другое More
2		Үлкен деректерді талдауға арналған машиналық оқыту Машинное обучение для анализа больших данных Machine Learning for Big Data Analysis		MOABD 5202-26 MOABD 5202-26 MOABD 5202-26														
Барлығы модуль бойынша / Итого по модулю / Total for module					5		150	45	30	15	0	15	90					
Модуль / Module № 4							//											
1		Бағдарламалық инженерия Программная инженерия Software Engineering	БП (ТК) БД (КВ) БД (ЕС)	PI 5203-26 PI 5203-26 PI 5203-26	2	5	150	45	30	15		15	90	Аппараттық технология Информационные технологии Information technology		2 + 1 + 0	Емтқан Экзамен Examination	Басқа Другое More
2		Қолданбалы аппарат теориясы Прикладная теория информации Applied Information Theory		PTI 5203-26 PTI 5203-26 PTI 5203-26														
Барлығы модуль бойынша / Итого по модулю / Total for module					5		150	45	30	15	0	15	90					
Модуль / Module № 5							//											
1		Кәсіпорын ресурстарын жоспарлау жүйелері Системы планирования ресурсов предприятия Enterprise Resource Planning Systems	Беп (ТК) ПД (КВ) ПД (ЕС)	SPRP 5301-26 SPRP 5301-26 SPRP 5301-26	1	5	150	45	30	15		15	90	Аппараттық технология Информационные технологии Information technology		2 + 1 + 0	Емтқан Экзамен Examination	Басқа Другое More
2		IT – менеджмент IT – менеджмент IT – Management		ITM 5301-26 ITM 5301-26 ITM 5301-26														
Барлығы модуль бойынша / Итого по модулю / Total for module					5		150	45	30	15	0	15	90					
Модуль / Module № 6							//											
1		АТ консалтинг IT-consulting IT Consulting	Беп (ТК) ПД (КВ) ПД (ЕС)	ITK 5302-26 ITK 5302-26 MEM 5302-26	2	5	150	45	30	15		15	90	Аппараттық технология Информационные технологии Information technology		2 + 1 + 0	Емтқан Экзамен Examination	Басқа Другое More
2		Тыңдау бөлуші модельдері Модели эффективного менеджмента Effective Management Models		MEM 5302-26 MEM 5302-26														
Барлығы модуль бойынша / Итого по модулю / Total for module					5		150	45	30	15	0	15	90					
Модуль / Module № 7							//											
1		Шешім қабылдауды қолдау модельдері мен әдістері Модели и методы поддержки принятия решений Models and Methods of Decision Support	Беп (ТК) ПД (КВ) ПД (ЕС)	MMPPR 6301-26 MMPPR 6301-26 MMPPR 6301-26	3	5	150	45	30	15		15	90	Аппараттық технология Информационные технологии Information technology		2 + 1 + 0	Емтқан Экзамен Examination	Басқа Другое More
2		Нейрондық желілердің модельдері мен әдістері Модели и методы нейронных сетей Models and Methods of Neural Networks		MMNS 6301-26 MMNS 6301-26														
Барлығы модуль бойынша / Итого по модулю / Total for module					5		150	45	30	15	0	15	90					

Модуль / Module № 8	Ақпараттық жүйелердің қауіпсіздігін басқару Управление безопасностью информационных систем Information Systems Security Management	БейП (ТҚ) ПД (КВ) PD (EC)	UBIS 6302-26 UBIS 6302-26 UBIS 6302-26	3	5	150	45	30	15	0	15	90	Ақпараттық технологиялар Информационные технологии Information technology	*	2 + 1 + 0	Елгісін Экзамен Examination	Басқа Другое More
2	Ақпараттық жүйелер деректерін басқару Управление данными информационных систем Information Systems Data Management		UDIS 6302-26 UDIS 6302-26 UDIS 6302-26														
Барлығы модуль бойынша / Итого по модулю / Total for module																	
/ /																	
Модуль / Module № 9	Ақпараттық технологияларды стратегиялық басқару Стратегическое управление информационными технологиями Strategic Management of Information Technologies	БейП (ТҚ) ПД (КВ) PD (EC)	SUIT 6303-26 SUIT 6303-26 SUIT 6303-26	3	5	150	45	30	15	0	15	90	Ақпараттық технологиялар Информационные технологии Information technology		2 + 1 + 0	Елгісін Экзамен Examination	Басқа Другое More
1																	
2	Терең машиналық оқыту және жасанды интеллект Глубокое машинное обучение и искусственный интеллект Deep Machine Learning and Artificial Intelligence		GMOH 6303-26 GMOH 6303-26 GMOH 6303-26														
Барлығы модуль бойынша / Итого по модулю / Total for module																	
/ /																	
Модуль / Module № 10	IT менеджментті заманауи әдістер мен стандарттары Современные методологии и стандарты IT менеджмента Modern Methodologies and Standards of IT Management	БейП (ТҚ) ПД (КВ) PD (EC)	SMSITM 6304-26 SMSITM 6304-26 SMSITM 6304-26	3	5	150	45	30	15	0	15	90	Ақпараттық технологиялар Информационные технологии Information technology	*	2 + 1 + 0	Елгісін Экзамен Examination	Басқа Другое More
1																	
2	Блокчейн технологиясының теориясы Теория технологии блокчейн Theory of Blockchain Technology		TTB 6304-26 TTB 6304-26 TTB 6304-26														
Барлығы модуль бойынша / Итого по модулю / Total for module																	
Корытынды аттестация / Итоговая аттестация / Final assessment																	
11	Корытынды аттестаттау (Магистранттар диссертацияны рәсімдеу және қорғау) (МДРҚ) Итоговая аттестация (Оборонение и защита)	2	8	240												6 апта / неделя / weeks	
Барлығы модуль бойынша / Итого по модулю / Total for module																	
Барлығы модуль бойынша / Итого по модулю / TOTAL FOR MODULES																	
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EXPERT OPINION

on the Educational Program 7M06137 "IT Management" of the scientific and pedagogical track of K. Kulazhanov Kazakh University of Technology and Business JSC

The Educational Program 7M06137 "IT Management" has been developed in accordance with the requirements of the State Mandatory Standards of Higher and Postgraduate Education of the Republic of Kazakhstan and sectoral qualification frameworks.

The objective of the program is to train master's graduates with professional competencies in the field of IT management who are capable of carrying out research, teaching, and managerial activities in the areas of information technologies and digital business transformation.

The content of the educational program is aimed at developing professional competencies in information technology management, data analytics, design and maintenance of information systems, IT project management, and the management of digital processes within organizations. The program includes disciplines focused on developing managerial, analytical, and research skills of master's students.

As part of the modernization of the program, disciplines reflecting current trends in the IT industry have been strengthened and introduced, including **"Machine Learning for Big Data Analytics"** and **"Design and Management of Network Technologies"**. This contributes to enhancing graduates' competitiveness and meeting the requirements of the labor market and employers.

The implementation of the educational program is ensured by highly qualified academic staff actively engaged in scientific and methodological activities.

The graduate competency model includes both universal and professional competencies and covers analytical, project, organizational and managerial, production and technological, and research activities.

Based on the results of the expert review, the following conclusions have been made:

- the educational program complies with the requirements of the State Mandatory Educational Standards of the Republic of Kazakhstan;
- the structure and content of the program are developed in accordance with the competency-based approach;
- the disciplines included in the curriculum fully reflect the modern content of training in the field of IT management;
- educational and methodological support, as well as academic staff potential, ensure high-quality training of master's graduates.

For further improvement of the educational program, it is recommended to update the content of elective courses annually, taking into account the rapid development of information and communication technologies, labor market needs, and employers' demands.

Conclusion: The Educational Program 7M06137 "IT Management" is recommended for implementation in the educational process. The content of the program meets current labor market requirements, enables the achievement of the intended learning outcomes, and ensures the training of competitive specialists in the field of IT management.

Director

SPECTRE SECURITY GROUP LLP



M. M. Turin

EXPERT CONCLUSION

on the Educational Program 7M06137 “IT Management”

The educational program 7M06137 “IT Management” in the scientific and pedagogical direction, implemented at the NJSC “Kazakh University of Technology and Business” named after K. Kulazhanov, represents a set of academic and methodological documents defining the objectives, content, expected learning outcomes, conditions for the implementation of the educational process, and the system for assessing the quality of master’s students’ training.

The educational program was developed and approved in accordance with the requirements of the State Compulsory Standard of Higher and Postgraduate Education of the Republic of Kazakhstan (Order No. 2 of the Ministry of Science and Higher Education of the Republic of Kazakhstan dated July 20, 2022, as amended and supplemented), as well as taking into account sectoral qualification frameworks.

The objective of the educational program 7M06137 “IT Management” is to train highly qualified specialists capable of carrying out research, teaching, and managerial activities in the fields of information technology and digital transformation. The content of the educational program ensures the development of universal and professional competencies in IT management, information systems management, data analysis, information security, IT infrastructure design and management, as well as research activities.

As part of the modernization of the educational program, disciplines corresponding to current requirements of the IT industry have been strengthened, including “Machine Learning for Big Data Analysis” and “Design and Management of Network Technologies.” Their inclusion contributes to the development of competencies in artificial intelligence, Big Data, digital transformation, and modern network infrastructure management. The implementation of the educational program is supported by qualified academic staff holding academic degrees and possessing experience in research and academic-methodological activities. The educational and methodological support includes course syllabi, course descriptions, assessment tools, internship programs, and final assessment materials.

The results of the expert review demonstrate that the structure and content of the educational program comply with the requirements of the State Compulsory Educational Standard of the Republic of Kazakhstan and are based on a competency-based approach. The courses included in the curriculum logically reflect the program’s educational profile and ensure the achievement of the expected learning outcomes.

Recommendations: Taking into account the rapid development of information and communication technologies, it is recommended to regularly update the content of elective courses in accordance with current IT trends, labor market requirements, and employers’ recommendations.

Conclusion: The educational program 7M06137 “IT Management” complies with the established regulatory requirements, has relevant and up-to-date content, ensures the development of the required professional competencies, and is recommended for implementation in the educational process.

Director

AI- TREND SCHOOL LLP



[Signature] **Makhmetov T. S**

EXPERT OPINION

on the Educational Program 7M06137 «IT Management» Research-Oriented Master's Degree Program of JSC «Kazakh University of Technology and Business»

The educational program (hereinafter referred to as the EP) 7M06137 "IT Management" of the scientific and pedagogical direction, implemented at the JSC "K. Kulazhanov Kazakh University of Technology and Business", is a system of educational and methodical documents regulating the goals, expected results, content, conditions and technologies for implementing the educational process, the system for assessing the quality of graduate training, and complies with the regulatory legal acts of the Ministry of Science and Higher Education of the Republic of Kazakhstan (MSHE RK).

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, with amendments and additions as of February 20, 2023), as well as on the basis of sectoral qualification frameworks.

The purpose of the educational program 7M06137 «IT Management» is to train IT management specialists capable of conducting research, pedagogical, and managerial activities in the field of information technology and digital transformation. The mandatory component of the professional educational program is aimed at developing managerial and communication competencies, which include the ability to plan and organize team workflow using modern management and business communication principles, as well as to analyze and monitor the operational activities of a department. The elective component of the educational program provides an opportunity to expand and deepen training, as well as to acquire additional competencies, skills, and knowledge necessary to ensure the graduate's competitiveness in accordance with labor market demands.

The implementation of the educational program is ensured by qualified teaching staff engaged in research and educational-methodical activities. Faculty members holding academic degrees and titles are involved in teaching the professional cycle disciplines.

The modules of the educational program 7M06137 «IT Management» provide comprehensive theoretical and practical training in IT management, data analysis, and information technology governance, as well as a module on systems, methodologies, and enterprise management standards.

Practical skills are developed through the following disciplines: Information Systems Security Management and Information Systems Data Management.

As part of updating the educational program 7M06137 «IT Management», key disciplines reflecting current trends in digital business transformation and technology management were added and enhanced. These include:

1. Machine Learning for Big Data Analysis. This discipline has been included in the educational program due to the high demand for specialists skilled

in data mining, forecasting, and business process automation. The modern labor market is oriented toward the development of the digital economy, where companies actively leverage artificial intelligence and Big Data technologies to drive managerial decision-making, enhance operational efficiency, and boost competitiveness. Studying this discipline will enable master's students to master the methods of processing and analyzing large volumes of data, building machine learning models, and applying analytical tools in the field of IT management, which fully aligns with the current requirements of employers and modern trends in digital business transformation.

Design and Management of Network Technologies. In the context of the active digitalization of organizations and the rapid development of cloud services, IoT, and distributed information systems, there is a growing significance of competencies in the design, administration, and management of network technologies. Mastering this discipline will allow master's students to acquire skills in designing and optimizing network infrastructure, managing network resources, and ensuring the sustainable operation of information systems, which aligns with the modern requirements of the IT industry and employers.

All course modules ensure the mastery of modern methods for managing and analyzing IT processes.

1. **Universal competencies:** general professional, social-personal, and socio-cultural.

2. **Professional competencies:** analytical, design, operational-technological, organizational-managerial, and research-focused.

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

1. The ability to formulate ICT utilization strategies across various subject areas and forecast potential development trends for these strategies.

2. Knowledge and understanding of the specific core domains and objects of IT management, the nature of client business goals and activities, as well as the principles of business process reengineering and optimization.

3. The ability to design information processes and systems using innovative software tools and instruments.

4. Proficiency in modern information technologies for managerial decision-making, coupled with leadership capabilities to plan, manage, and control requirement execution; conduct assessments of complexity, risks, budget, and time constraints throughout the project lifecycle; monitor the project schedule; and maintain the information system across all stages of its lifecycle.

5. The ability to utilize and advance scientific research methodologies in the field of emerging technologies for information systems design and development within applied domains.

Based on the provided expertise, the following conclusions can be drawn:

- The program submitted for review meets the requirements of the State Compulsory Educational Standards of the Republic of Kazakhstan (SOES RK);
- The structural elements of the program are implemented in accordance with the competence-based approach;

- The curriculum disciplines logically reflect the scope of the 7M06137 «IT Management» specialization profile, taking into account interdisciplinary connections;

- The teaching and methodological support includes course syllabi, course descriptions, assessment toolkits, as well as internships and final state certification programs;

- The institutional environment of the university and the faculty ensures the development of the graduate's socio-cultural competencies.

Recommendations for improving the educational program: Given the constant dynamic changes in information and communication technology methods and tools, it is recommended to update elective courses by 10% annually. This update should align with the graduate competencies of the educational program 7M06137 «IT Management», market economy requirements, and employer demands.

Conclusions:

- The educational program is recommended for integration into the academic process;

- The structure and content of the educational program 7M06137 «IT Management» are focused on meeting the needs of the labor market and employers, align with comparable Master's degree programs within the European Higher Education Area (EHEA), and ensure the achievement of the expected learning outcomes.

Head of «SAUDA TECHNOLOGIES» LLP

A.R. Muratkan

Date: 30.06.2026

