

AGREED
Chairman of the Educational and
Methodological Department
Council of JSC "IITU"
Mustafina A.K.
"30" 03 2023

APPROVED
Chairman of the Board – Rector
JSC "International University of Information
Technologies"
Khikmetov A.K.
"30" 03 2023

EDUCATIONAL PROGRAM

7M06109 Business analysis

Code and classification of field of education: 7M06 Information and communication technologies

Code and classification of areas of training: 7M061 Information and communication technologies

Group of educational programs: M094 Information technology

ISCED level: 7

NQF level: 7

IQF level: 7

Duration of training: 1 year

Volume of credits: 60

AGREED
Deputy Director
QAZTEX Innovations, LLP



AGREED
Director
Zhambay Group, LLP

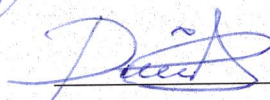


Almaty, 2023

Educational program 7M06103 Business-analysis is the main academic document of the university for training in the direction of "Information and Communication Technologies" for the 7th level of qualification (master's degree).

This educational program was discussed and approved at the meeting of the department of Information Systems dated "07" february 2023 Protocol No. 3

Head of the department

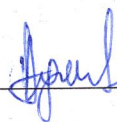


Kozhamzharova D.Kh.

This educational program was reviewed and approved at a meeting of the university's academic council on March 30, 2023. Protocol No. 8

Head of Department

for educational and methodological activities



Ajibayeva A.Sh.

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List of abbreviations and symbols

ANP	Atlas of new professions
BC	Basic competence
ICT	Info-communication technologies
AI	Artificial intelligence
IS	Information Systems
IT	Information technology
QC	Quantum computing
NQF	National Qualifications Framework
NQC	National Qualifications System
EP	Educational program
GPM	General professional module
IQF	Industry Qualifications Framework
PS	Professional standard
PGE	Postgraduate education
PC	Professional competence
PM	Professional module
WG	Working Group
RK	Republic of Kazakhstan
LO	Learning outcome
RS	Regional standard

1. Description of the educational program

This educational program (EP) was developed on the basis of professional standards (PS) of the National Chamber of Entrepreneurs "Atameken", the National Qualifications Framework (NQF), the Industry Qualifications Framework (IQF) in the field of information technology and regional training standards (RS), based on research and trends indicated in the Atlas of New Professions and Competencies (ANP) of Kazakhstan in the field of information technology.

The latest achievements in the field of information technology have made it possible for organizations, enterprises, institutions, government agencies and businesses to accumulate large volumes of data. Business analysis is modern methods and tools for extracting useful information from large volumes of data in order to deeply understand and optimize business processes and make the best management decisions. Using models and methods for extracting knowledge from data, a business analyst is able to analyze all available decision options in complex situations, predict and evaluate the possible consequences and risks of their implementation, and develop recommendations for management decision makers. Business analysis as a discipline is closely related to requirements analysis, but aims to identify changes to the organization that are required in order for the organization to achieve strategic goals. These changes include changes in strategy, structure, policies, processes and information systems. Business analysis as a modern trend of higher professional education of the new generation, substantiates the innovative aspects of the master's program in business analysis, which form the most important qualification characteristics of modern in-demand professions of business analyst.

One of the key specialists in the IT field is a business analyst. Today, the labor market requires specialists who are able to work in the field of business analysis of multidimensional data of a complex structure, in the field of managing enterprise business processes and making effective management decisions based on data analysis.

The main competitive advantages of the Business Analytics EP are: 1) that it is focused on the needs of modern personnel policy in the field of business analysis; 2) in demand in the educational services market due to the relevance, novelty and insufficiency of educational programs for training business analysts; 3) the professional cycle of disciplines has a customizable block for the choice of undergraduates, which maximally takes into account their interests in certain areas of analytical activity, and the program also provides starting intellectual capital for an academic and scientific career.

Convergence of EP areas is ensured through an optimal combination of disciplines in a balanced curriculum, providing a complex of knowledge necessary for successful professional activity in the field of business analysis in the context of digitalization.

A master's degree in Business Analytics will have a unique set of competencies that are in demand in any modern enterprise: know modern methods and technologies of data mining; be able to apply them in the analysis and design of an organization's business processes, providing analytical support for decision-making processes; own data mining and business analytics tools to model a digital business and improve the efficiency of its functioning and development.

Graduates can work in enterprises and organizations of any form of ownership in various market segments as IT managers, business analysts, information systems and IT business architects, heads of areas and business projects. Masters in the field of study "Business Analysis" can realize themselves in most applied areas related to the use of IT competencies, including in the scientific field related to the use of mathematical methods and tools.

2. Purpose and objectives of the educational program

The purpose of the EP is to provide applied training for masters in the field of business analysis of business processes and/or ICT projects of an organization in accordance with the requirements of the new information society.

Objectives of the EP: to equip students with theoretical knowledge and practical skills necessary for:

- 1) formation of ideas about the role and place of business analysis in the activities of an enterprise;
- 2) application of cognitive models of data analysis to make effective management decisions;
- 3) use of business intelligence tools and platforms;
- 4) modeling and optimization of business processes and/or ICT projects of the organization;
- 5) developing skills in formation data analysis models;
- 6) IT project management in the field of information systems development based on business analysis.

3. Requirements for assessing learning outcomes of an educational program

The following forms of exams are used to assess learning outcomes: computer testing, written exam (answers on sheets), oral exam, project (passing a course project, experimental research work of a master's student), practical (open-ended questions on a computer, solving problems on a computer), comprehensive (test/written/ oral+other). In accordance with Table 1, the following ratio of exam forms is recommended:

Table 1

No.	Exam form	Recommended share, %
1	Computer testing	5%
2	Writing	80%
3	Oral	5%
4	Project	5 %
5	Practical	0%
6	Complex	5%

The final certification of students is carried out within the time limits provided for by the academic calendar and the working curriculum of the EP in the form of defending a master's project.

4 Educational program passport

4.1 General information

No	Field name	Note
1	Code and classification of field of education	7M06 – Information and communication technologies
2	Code and classification of areas of training	7M061 - Information and communication technologies
3	Group of educational programs	M094 – Information technology
4	Name of educational program	7M06109 – Business analysis
5	Brief description of the educational program	The main competitive advantages of the EP "Business Analysis" are: 1) that it is focused on the needs of modern personnel policy in the field of business analysis; 2) in demand in the educational services market due to the relevance, novelty and insufficiency of educational programs for training business analysts; 3) the professional cycle of disciplines has a customizable block for the choice of undergraduates, which maximally takes into account their interests in certain areas of analytical activity, and the program also provides starting intellectual capital for an academic and scientific career.

6	Purpose of the EP	provide training for masters of engineering and technology in the field of business analysis of business processes and/or ICT projects of organization in accordance with the requirements of the new information society.
7	ISCED level	7
8	Level according to NQF	7
9	ORC level	7
10	List of competencies of the educational program: BC1: The ability to interact constructively and creatively in the process of interpersonal and business communication, to freely use foreign languages when preparing, presenting and discussing the results of professional activities. BC2: Ability to put into practice the skills of organizing design work and managing a team; be able to take initiative, take full responsibility; evaluate performance; take into account the peculiarities of management in the field of professional activity. BC 3 : Ability to set up and conduct experiments according to a given method; analyze the results of experiments using information and communication technologies, select optimal solutions, prepare and compile reviews and reports. BC4: The ability to develop business strategies for an organization, formulate the company's strategic goals, conduct various types of analysis of the organization's activities, and manage enterprise resources to achieve strategic goals. PC 1: Ability to manage business processes of an enterprise, analyze business processes and models, justify ways to optimize them and innovative development of the organization. PC 2: Ability to apply methods for constructing, analyzing and applying models to assess the state and forecast the development of business processes, analyze enterprise architecture, and apply methods for managing business objects. PC 3: Ability to manage the life cycle stages of the methodological and technological infrastructure for big data analysis in an organization, including the use of cloud computing. PC4: Ability to apply modern approaches to solve problems of business analysis, data mining and machine learning, be able to select an correct model for the problem being solved and justify its effectiveness. PC 5: Ability to develop and manage IT projects, determine the organizational structure of the project , critical success factors , main characteristics of the quality of IT projects. PC6: Ability to put into practice professional skills in conducting business analysis, developing and managing IT projects, managing IT project risks, choosing a methodology and technology for IS design taking into account project risks and business processes of the enterprise.	
11	Learning outcomes of the educational program: LO1: Be able to apply management skills and analyze the results of the team's professional activities, be able to draw up and present for discussion reports on the results of professional activities with substantiated conclusions and recommendations . LO2: Be able to interact constructively and creatively in the process of interpersonal and business communication, fluently use foreign languages in professional activities. LO3: Select rational methods for conducting business analysis, analyze, assess and forecast the state of the situation in the organization using analytical platforms and tools. LO4: Organize and plan analytical work, use analysis results in business management, manage the preparation and implementation of innovative projects, develop options for management decisions and analytically justify their choice. LO5: Be able to develop and manage IT projects and optimize the IT project development process, classify IT risks, manage the quality and risks of IT projects and optimize the IT risk management process, apply standards and methods of relationship management, in particular the psychology of IT project management and negotiations .	

	LO6: Apply data mining technologies to solve specific practical problems of business analysis, use the capabilities of universal software tools and analytical platforms to search for patterns, relationships, rules, knowledge in an electronic data set. LO7: Own business process management methodology, be able to use tools for improving business processes, apply methods of modeling, analysis and optimization of business processes. LO8: Identify key issues in the organization's business strategies, manage the organization's development, develop and analyze the organization's strategy based on modern methods. LO9: Be able to use the principles of organizing analytical processing of big data, master data transformation technologies, choose rational methods and cloud computing technologies for conducting metadata analysis.	
12	Form of study	full-time
13	Language of instruction	English
14	Volume of loans	60
15	Academic degree awarded	Master of Engineering and Technology in educational program 7M06109 – Business Analysis
16	Professional standards of the National Chamber of Entrepreneurs "Atameken"	27 . Business analysis in information and communication technologies (version 2, 2022) 277. Conducting web monitoring (version 2, 2022)
17	Developer(s) and authors:	JSC "International University of Information Technologies", Department of Information Systems: - Sembina G.K., associate professor, Candidate of Technical Sciences - Kabdushev Sh.B., senior lecturer

4.2 Matrix for correlating learning outcomes in the educational program as a whole with the competencies being formed

	LO1	LO2	LO3	LO4	LO5	LO6	LO7	LO8	LO9
BC1		V							
BC2	V			V	V				
BC3	V								
BC4								V	
PC1							V		
PC2			V						
PC3									V
PC4						V			
PC5					V				
PC6					V				

4.3 Information about modules/disciplines (if there are modules, you must select them)

N o.	Name of the discipline	Brief description of the discipline (30-50 words)	Number of credits	Formed competencies (codes)	Disputed visits
Cycle of basic disciplines					
University Component/Elective Component					
1.	Foreign language (professional)	Students will become familiar with the processes of activity and sequence of procedures that are central to research: in particular, how to determine the area and topic of research, how to conduct research, how to work with various databases and data sources. During the course, master's students will work on one project.	2	BC1	No
2.	Management	Methodological foundations of management: management as a type of activity; Management history; Organization as an object of management. Integration processes in management: communication and management; Management decisions in the management process. Control functions. Group dynamics and leadership: managing human activity and group management.	2	BC2	No
3.	Psychology of management	Acquaintance with modern interpretations of the subject and the main categories of psychological science; psychological control mechanisms and patterns of interpersonal interaction in professional conditions; substantiation of the relevance of psychological knowledge in solving practical issues in human life; development of systematic, creative thinking of the future specialist, research culture and the need for continuous self-education and self-development.	2	BC2	No
Cycle of major disciplines					
University Component/Elective Component					

4.	Business process management	Theoretical foundations of business process management. Process management theories. Life cycle of business process management. Models and tools used to describe business processes. Business process analysis. Classification of business process analysis techniques. Qualitative analysis of business processes. Quantitative analysis of business processes. Structuring method. Statistical process control. Automation of business processes.	5	PC1	Modeling and analysis of business processes
5.	Business analytics	The basic principles, features, methods and models, platforms and tools for business analysis, methods for discovering new knowledge in data warehouses, basic concepts of data mining, and evaluating the effectiveness of business analytics systems are studied. Provides for performing analysis, visualization and interpretation tasks using statistical data analysis programs, analytical platforms and tools.	5	PC2	Data Mining
6.	Business Intelligence	Methods and technologies for data mining, methods for constructing decision support systems, multidimensional analysis methodologies, data mining tools, and technologies for linguistic analysis of business information are studied.	5	PC4, PC5, PC6	Machine learning methods
7.	Analysis and processing of unstructured data	Software for creating and processing big data and user interfaces, applied aspects of computer programs and working with big data, problems of generating, storing and accessing massive data, protecting information and	5	PC3	Introduction to Machine Learning

		data are studied; big data services			
8.	Cloud Computing for Big Data Analytics	Acquiring knowledge in the field of data storage, studying modern Big Data technologies; SQL programming language for big data analytics and cloud technologies for big data processing.	5	PC3	Introduction to Machine Learning
9.	IT project development	Familiarization of undergraduates with the theoretical and practical fundamentals of project management in the field of information technology, development of practical skills in preparing and managing projects, learning the ability to communicate with a team to achieve productive activities.	4	PC5	No
10	Project quality and risk management	The place and role of risk management in project management . Organization of a risk management system. Management of risks. Price risks. Operational risks. Investment risks. Methods of analysis and indicators for assessing project risk.	4	PC 6	No
11	Business strategy development	Development of a business strategy for an enterprise; Design of product, production process and production facilities; Management of activities in production; Management of activities in the service sector; Updating production/operating systems	4	BC4	No
12	IT and strategic management methods in the project	In the process of studying the course, undergraduates will master effective methods and tools of production management in order to ensure sustainable competitiveness in the long term in the face of constant changes in the business environment. support.	4	BC4	No

5. Educational program curriculum

Discipline code	Name of disciplines	Distribution of credits by courses and semesters										number of weeks			
		Total credits	Semester	Total hours	classrooms	including			Total	SRMP	SRM (non-audit)	15		15	
						lectures	practical	laboratory				202 3 -202 4		1	
I. Theoretical training															
1. Cycle of basic disciplines (BD)															
1) University component (UC)															
LAN7002	Foreign language (professional)	2	1	60	thirty	15	15		thirty	15	15	2			
MGT7001	Management	2	1	60	thirty	15	15		thirty	15	15	2			
SPS700 4	Psychology of management	2	1	60	thirty	15	15		thirty	15	15	2			
	Total DB VK	6		180	90	45	45		90	45	45	6			
2) Component of choice (CC)															
	Elective discipline 1	4	2	120	thirty	15	15		90	15	75		4		
SFT7126*	Business strategy development														
PM7106*	IT and strategic management methods in the project														
	Total DB KV	4	2	120	thirty	15	15		90	15	75		4		
	Total database	10		300	120	60	60		180	60	120	6	4		
2. Cycle of major disciplines (MD)															
1) University component (UC)															
SFT7134*	Business process management	5	1	150	45	15	30		105	15	90	5			
SFT7108*	Business analytics	5	1	150	45	15	30		105	15	90	5			
SFT7106*	Business Intelligence	5	2	150	45	15	30		105	15	90		5		

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6. Agreement sheet with developers

Name of educational program: 7M06109 Business analysis

No.	Position, scientific or academic degree and name of educational program developer	Date	Signature	Note
1	Associate Professor of the Department of Information Systems, Candidate of Technical Sciences, Associate Professor Sembina G.K.	03.02 2023		
2	Senior lecturer of the Department of Information Systems, Kabdushev Sh.B.	03.02 2023	