MINISTRY OF SCIENCE AND HIGHER EDUCATION OF THE REPUBLIC OF KAZAKHSTAN
NJSC KORKYT ATA KYZYLORDA UNIVERSITY

I APPROVE
Chairman of the committee
Academic quality
«09» 06 2023г.

GRADUATE MODEL

Master's degree in the educational program
7M06149 - "Information systems"

Kyzylorda, 2023

CONTENT

INTRODUCTION

The graduate model of Korkyt Ata University is a comprehensive image of the result of studying at the university at all levels of education. The graduate model is recommended for use in the development of educational programs.

The development of a graduate's competence model is an important prerequisite for the implementation of the main directions of the Bologna process and a requirement of the modern labor market. The competence model of a graduate (bachelor) is designed to answer the question of what professional tasks a specialist of a certain rank (position), of a particular profile should be able to solve. The formation of a modern graduate model that meets the needs of all interested parties is the main strategic goal of Korkyt Ata University and is provided with the necessary resources for the educational process, including personnel, educational, methodological, informational and logistical support. The University conducts a targeted personnel policy and systematic improvement of the material and technical base of the university to ensure the quality of training of a bachelor graduate in demand in the labor market.

1. DESCRIPTION DESCRIPTION

The educational program 7M06149-Information Systems is implemented in order to develop the potential of higher education, taking into account the educational needs and requests of students. The educational program includes materials that ensure the quality of training of students and the introduction of appropriate educational technologies in the field of personnel training.

2. THE CONSTITUENT COMPONENTS IN THE FORMATION OF THE GRADUATE MODEL OF THE EDUCATIONAL PROGRAM

The key components of the formation of the graduate Model of the educational program include information about the goals and objectives of the educational program, objects, types and directions of professional activity, the competence model of a specialist (Appendix 1), including descriptors, a variety of competencies in accordance with the educational program, the results of the educational program.

2.1 Objectives of the Educational Program:

Training of highly qualified researchers, competitive specialists in the field of hardware and software development and computer science for accelerated innovative development of the economy of the Republic of Kazakhstan.

2.2 Objectives of the Educational Program:

To prepare a specialist proficient in modern information technologies, including methods of obtaining, processing and storing scientific information, possessing fundamental knowledge of applied disciplines, with a high level of professional culture, possessing technical skills in designing, operating and managing computer-controlled equipment, including mathematical models and methods used in decision support systems.

2.3 General and professional competencies

General:

- knows paradigmatic theories in the history of science
- he knows the methodology of higher school pedagogy and the achievements of psychological science
- he is able to use knowledge of modern problems of science and education in solving professional tasks
- applies methods and means of cognition for intellectual development, improvement of cultural level, professional competence.

Professional:

- use the most appropriate technologies for the design and development of OT solutions, OT resource management based on the analysis of the information needs of the organization;
- apply the principles of IP project management in the enterprise;
- to use mathematical methods for modeling business processes of the organization and the formation of algorithms for the functioning of information systems;
- design and develop IC applications and algorithms for the functioning of IC modules based on domain analysis;
- design the IP infrastructure and architecture based on the analysis of the enterprise architecture;
- to form solutions to problems based on research in the field of information systems by integrating knowledge from new or interdisciplinary fields and taking into account social, ethical, linguistic and scientific considerations.

2.4 Matrix of correlation of learning outcomes of the educational program with the competencies being formed

Competence number, discipline code	OH1/PO1/LO1	OH2/PO2/LO2	OH3/PO3/LO3
ЖҚ1/ОК1/GC1	+		
ЖҚ2/ОК2/GC2	+		
ЖҚ3/ОК3/GC3	+		
ЖҚ4/ОК4/GC4	+		
КҚ1/ПК1/PC1		+	
КҚ2/ПК2/PC2		+	
КҚ3/ПК3/PC3		+	
КҚ4/ПК4/PC4		+	
КҚ5/ПК5/PC5		+	
КҚ6/ПК6/PC6		+	
КҚ7/ПК7/PC7			+
КҚ8/ПК8/PC8			+
КҚ9/ПК9/PC9			+
КҚ10/ПК10/PC10			+
КҚ11/ПК11/PC11			+
КҚ12/ПК12/PC12			+
КҚ13/ПК13/PC13		+	+
КҚ14/ПК14/PC14		+	+

LO 1	He knows paradigmatic theories in the history of science, knows the methodology of higher school pedagogy and the achievements of psychological science, knows how to use knowledge of modern problems of science and education in solving professional problems, applies methods and means of cognition for intellectual development, improving cultural level, professional competence.
LO 2	He knows the methodology of economics and the technology of processing a mathematical model, the means of mathematical support for information and automated systems, the principles of model construction. He is proficient in system analysis methods and CASE-based software design tools using visual modeling. Knows the technology of using cloud computing.
LO 3	Uses neural networks to solve problems of classification, forecasting and management of objects of professional activity. Develops and implements business strategies to achieve project and program goals and a methodology for implementing information processes. He is able to use computer tools to protect information from unauthorized access.

2.5. Personal qualities of a social work specialist:

- purposefulness,
- responsibility,
- determination,
- initiative,
- communication skills,
- ability to work in a team,
- decency,
- mobility,
- independence,
- attentiveness,
- energy,
- creativity,
- sense of duty,
- organization.

CONCLUSIONS

This graduate model is the methodological basis for the implementation of the technology of the competence approach. It is also important to understand that the formation of these competencies in a graduate is ensured through a certain way organized and implemented educational process. In market conditions, universities are beginning to pay more attention to the quality of graduates: after all, a graduate is exactly the result of university education that enters the labor market. And it has to be competitive. It is in order to prepare graduates in demand on the market that it is necessary to form a comprehensive portrait of him, a certain matrix of characteristics. From understanding the key advantages, characteristics, and competencies of graduates that employers need, it is possible to move on to creating an effective modern university: to form educational programs, create infrastructure, and use new learning formats.

Appendix 1

The graduate's competence model

Module	ДДБ (Dublin Descriptors of bachelor)	Emerging competencies			Planned learning outcomes
		general education competencies	basic competencies	professional competencies	
1	2	3	4	5	6
М1	ДДБ1 ДДБ2 ДДБ3 ДДБ4 ДДБ5	GEC 1			LO 1 Is able to present the content of the main modern philosophical ideas, is able to identify the distinctive features of modern philosophical schools, and can give a critical analysis of modern philosophical problems
	ДДБ1 ДДБ2 ДДБ3 ДДБ4 ДДБ5	GEC 2			LO 1 conveys the content of the read and heard text, is able to annotate and abstract authentic popular science articles, texts and monographs, is able to make messages on the topic in the form of a review abstract or report containing a personal assessment and argumentation
	ДДБ1 ДДБ2 ДДБ3 ДДБ4 ДДБ5	GEC 3			LO 1 It forms the norm of educational training, forms the quality of personality necessary for high-quality, effective work in a certain field.
	ДДБ1 ДДБ2 ДДБ3 ДДБ4 ДДБ5	GEC 4			LO 1 Is able to realize, bear social and ethical responsibility for the possible consequences of decisions made
М3	ДДБ1 ДДБ2 ДДБ3 ДДБ4 ДДБ5		БС 1	ПС 1	LO 2 They are able to apply the basic methods of obtaining and converting models of dynamic systems, analysis and synthesis of control systems, and optimal control theory
	ДДБ1 ДДБ2 ДДБ3 ДДБ4 ДДБ5		БС 2	ПС 2	LO 2 He is able to solve optimal performance problems for linear controlled systems, knows the basic methods of analysis and synthesis of continuous and discrete control systems

	ДДБ1 ДДБ2 ДДБ3 ДДБ4 ДДБ5		БС 3	ПС 3	LO 2 Is able to formalize professional knowledge, set tasks and solve them with the help of modern software tools
	ДДБ1 ДДБ2 ДДБ3 ДДБ4 ДДБ5		БС 4	ПС 4	LO 2 Is able to identify common forms, patterns, and tools of a particular subject area
	ДДБ1 ДДБ2 ДДБ3 ДДБ4 ДДБ5		БС 5	ПС 5	LO 2 He knows the areas of application of cloud technologies, the practical realization of the benefits of cloud technologies in modern business, the use of tools of this technology.
	ДДБ1 ДДБ2 ДДБ3 ДДБ4 ДДБ5		БС 6	ПС 6	LO 2 Knows the structure and general scheme of functioning of intelligent
	ДДБ1 ДДБ2 ДДБ3 ДДБ4 ДДБ5		БС 7	ПС 7	LO 3 He is able to apply research methods in independent research activities in the field of professional activity
	ДДБ1 ДДБ2 ДДБ3 ДДБ4 ДДБ5		БС 8	ПС 8	LO 3 Undergraduates know about the technologies of preparation, storage, processing and analysis of big data
	ДДБ1 ДДБ2 ДДБ3 ДДБ4 ДДБ5		БС 9	ПС 9	LO 3 mastering the practical skills of a master in working with modern network filters and tools for cryptographic modification of information.
	ДДБ1 ДДБ2 ДДБ3 ДДБ4 ДДБ5		БС 10	ПС 10	LO 3 Improves professional skills in software development using mathematical methods and models

	ДДБ1 ДДБ2 ДДБ3 ДДБ4 ДДБ5		БС 11	ПС 11	LO 3 Improves professional skills in software development using mathematical methods and models
М4	ДДБ1 ДДБ2 ДДБ3 ДДБ4 ДДБ5		БС 12	ПС 12	LO 3 Knows modern aspects of the research of the organization's management systems
	ДДБ1 ДДБ2 ДДБ3 ДДБ4 ДДБ5		БС 13	ПС 13	LO 3 Knows the key principles and basic technologies of distributed computer systems and networks, and in addition, approaches to ensuring their effectiveness
	ДДБ1 ДДБ2 ДДБ3 ДДБ4 ДДБ5		БС 14	ПС 14	LO 3 Knows the programs and stages of empirical research, Owns modern achievements in the field of information technology, Knows methods for determining reliability indicators, Has skills in configuring local networks, implementing network protocols using software, Uses neural networks to solve problems of classification, forecasting and management of objects of professional activity.

M 1 - Sciense knowledge
M 2 - Sciense (by industry) and innovation-
M 3 - The final assessment-