

TURAN-ASTANA UNIVERSITY

APPROVE

The first vice - rector
is Professor Adilgazinov G. Z.

" ____ " _____ 2021

EDUCATIONAL PROGRAM DEVELOPMENT PLAN 6B06101– "Information systems" for the period 2021-2025

Nursultan, 2021

1. Information about the educational program

The Department of Information Technologies trains bachelor's degree specialists in the educational programs 6B06101-"Information Systems", 6B06102-"Computer Engineering and software" and master's degree in the educational program 7M06101-"Information Systems" (specialized, scientific and pedagogical) in the state and Russian languages (license AB No.0137367 dated February 03, 2010 G.).

The mission of the educational program 6B06101-"Information Systems" is to provide high-quality educational services in the field of higher education in the training of specialists who will have knowledge of the methodological foundations of the design and implementation of automated information systems, modern technologies for the development of information systems, administration and design of databases, server and network infrastructure in implementation projects.

The standard period of mastering for full-time education is 4 years.

The purpose of the educational program is to train highly qualified specialists in the design, creation and administration of information systems with knowledge in the field of information, mathematical, software and technical support of information systems, which allow them to apply various approaches to solving complex management tasks in their professional activities.

Objectives of the educational program:

1. creation of components of information systems, production of programs and software complexes;
2. testing and debugging of software complexes of information systems;
3. installation, configuration and administration of network services of computer networks;
4. certification of objects of professional activity
project management of creation, implementation and maintenance of information systems;
5. the choice of technology, tools in the organization of the process of development and implementation of objects of professional activity;
6. organization of individual stages of the process of developing objects of professional activity with a given quality in a given time;
7. training of personnel within the framework of the accepted organization of the process of developing objects of professional activity;
8. development of requirements and specifications of individual components of objects of professional activity based on the analysis of user requests, domain models and capabilities of technical means.

A bachelor's degree graduate of OP 6B06101-"Information Systems" is awarded a bachelor's degree in the field of information and communication technologies under the educational program "6B06101- Information Systems".

The graduate model of this specialty is the professional activity of a graduate with an economic education under the educational program 6B06101– "Information Systems" is carried out in the following types of activities:

- design and engineering;
- production and technological;
- experimental research;
- organizational and managerial.

Qualifications and positions of graduates of OP 6B06102-"Computer equipment and software" are determined in accordance with the qualification directory of positions, managers, specialists and other employees, the professional standard approved by the order of the Deputy Chairman of the Board of the National Chamber of Entrepreneurs of the Republic of Kazakhstan "Atameken" No. 171 dated June 17, 2017:

- 1.Chief Information Security Specialist;

2. Information Security Administrator;
3. Information Security Engineer;
4. Software Engineer (programmer);
5. Programmer (webmaster, web designer);
6. Information security specialist in key information infrastructure systems;
7. Information Security Specialist;
8. Technician of the computing (information and computing) center;
9. Information Security Technician;
10. Programmer technician;
11. Database Administrator;
12. Specialist in the creation and management of information resources;
13. System analyst.

Schematically, the graduate model is given in Appendix 1.

Graduates of OP 6B06101 - "Information Systems" have a number of knowledge, among which one can distinguish:

1. Common core competencies:

-in the field of native and foreign languages:

Know: communication technology, communication strategy.

Be able to: build a constructive dialogue, communication in a multicultural, multi-ethnic and multi-confessional society.

Possess the following skills: competent and developed speech, native and foreign languages.

- in the field of fundamental mathematical, natural science and technical training:

To know: fundamental mathematical, natural science and technical disciplines that contribute to the formation of a highly educated person with a broad outlook and a culture of thinking.

Be able to: formulate and solve problems, analyze; prove the results obtained; apply formulas, basic laws of natural science disciplines in professional activity.

Possess the skills to apply methods of analysis, synthesis to solve applied problems, apply methods of mathematical analysis and modeling, theoretical and experimental research.

-in the field of computer technology:

To know: basic concepts, principles, theories and facts related to computer science; basic information technologies.

Be able to: apply and use information technology in professional activities.

Possess the skills of: programming using modern tools.

- 2 General education competencies:

- in the field of socio-cultural activities:

To know: ethical, spiritual and cultural values, basic laws and forms of regulation of social behavior, sociological approaches to personality, traditions and culture of the peoples of Kazakhstan, trends in the development of society.

Be able to: adequately navigate in various social situations, think creatively, be tolerant of the traditions and culture of other peoples of the world, have an active life position.

Possess skills: methods of socio-cultural research, analysis of problem situations.

-in the field of educational activities:

To know: the fundamental disciplines of the emerging science of psychology. **Уметь:** использовать системы категорий и методов, необходимых для решения типовых задач в различных областях профессиональной практики, применять теоретическое и экспериментальное исследования, основные методы математического анализа и моделирования для обработки данных, полученных при решении различных профессиональных задач, проводить библиографическую и информационно-поисковую работу с последующим использованием данных при решении профессиональных задач и оформлении научных статей, отчётов, заключений.

Possess the skills of: perception of the personality of another, empathy, establishing trusting contact and dialogue, persuasion and support of people; finding organizational and managerial decisions in non-standard situations and readiness to take responsibility for them, effective consolidation of theoretical knowledge during the period of training and industrial practices, conscious choice of disciplines of specializations, analysis of their activities and the ability to apply methods of emotional and cognitive regulation (for optimization) of one's own activity and mental state.

- in the field of entrepreneurial, economic activity:

To know: fundamentals of economics and entrepreneurship; the role of entrepreneurial risks in business, the importance of the public sector in the economy and entrepreneurship; the main provisions of the current legislation of the Republic of Kazakhstan; critical factors of project success, the composition of project management documentation, standard tools for the decomposition of project work; the basics of evaluating the effectiveness of innovative processes being developed; the basics of the methodology of project and research activities.

Be able to: identify methods of state regulation of the economy, apply principles and norms governing business and government relations; use methods of risk management in entrepreneurship; navigate the current legislation; develop project management documents, risk management plan; apply the knowledge gained to solve practical problems in innovative development; determine the goals and objectives of project and research work.

Possess the skills of: using the acquired knowledge on the subject in entrepreneurial activity; analysis of economic and entrepreneurial relations and risks; use of legal norms in order to achieve positive results in the economy; management of innovative projects in the development of the company, reading scientific, analytical, statistical reports and methods of assessing innovative development; registration of theoretical and experimental results of research and project work.

3 Professional (special) key competencies:

have an idea:

-about trends and prospects of modern information technologies.

-about the use of packages and libraries in programming, about modern algorithmic languages, their scope and features.

To know:

-the main classes of models and modeling methods, principles of building process models, methods of formalization, algorithmization and implementation of models of systems on a computer.

-stages of the database design process.

-methods of database protection.

-methods of analysis and evaluation of the effectiveness of the development, implementation and functioning of the information system.

be able to:

-use system concepts to understand and define.

-programming using modern tools.

-apply methods and tools for developing algorithms and programs, structural programming techniques, ways to write an algorithm in a high-level language, ways to debug, test and document programs.

-analyze your own and foreign experience in the development and implementation of information systems.

have the skills of: choosing architecture and integrating hardware of information systems.

be competent in matters of:

-selection of methods of analysis and evaluation of the effectiveness of the development, implementation and functioning of the information system.

--development of components of software complexes and databases, the use of modern tools and programming technologies.

-selection of methods and technologies for project management for the creation and implementation of information systems in the business activities of organizations.

The effectiveness of the objectives of the educational program will be systematically evaluated through planned consideration at meetings of the department, the Faculty Council, the Dean's Office of questions about student performance, the results of practice, the level of residual knowledge, the quality of defense of diploma projects and passing state exams, the degree of student satisfaction with the quality of education, the number of graduates employed in the specialty.

2. The main directions of the educational program development

The main directions of development of the educational program in the specialty 5B070300 - "Information systems"

Improvement of the educational program based on the competence approach:

1. Providing conditions for obtaining a full-fledged, high-quality professional education.
2. Involving employers in the process of improving the OP, determining the professional competencies of the graduate, preparing educational and methodological support for the disciplines proposed by the employer.
3. Creating an innovative educational environment
4. Expansion of the educational space
5. Creation of a broader alternative to the elective component disciplines for the formation of an individual trajectory and research work of a student.

Ways of development of the educational program 6B06101 - "Information systems":

№	Tasks	Main paths	Deadlines for implementation
1	Preparation of students of the educational program 6B06101- "Information systems" in accordance with the requirements of the modern labor market on the basis of an activity-competence approach.	<ol style="list-style-type: none"> 1. The formation of practice bases and the conclusion of contracts with large regional enterprises, organizations and institutions for students to undergo practical training on their basis. 2. Discussion of disciplines introduced into the elective component with employers, business structures. 3. Introduction of new disciplines into the elective component of the OP. 	<p>May- September 2021-2022 may- September 2022-2023 may- September 2023-2024</p> <p>December - January 2021-2022 december - January 2022-2023 december - January 2023-2024</p> <p>December - January 2021-2022 december - January 2022-2023 december - January 2023-2024</p>
2	Formation of the contingent	1. Admission of persons to the number of students most prepared for training under the educational program 6B06101-"Information Systems", who consciously chose the specialty of this educational program and scored the required number of points based on the results of entrance exams, in accordance with the Standard Rules for admission to training in educational organizations implementing educational programs	June-August 2021-2022 y.g. june-August 2022-2023 y.g. june-August 2023-2024 y.g.

		of higher education dated January 19, 2012 No. 111	
3	Formation of cooperation with strategic partners and other interested parties	<ol style="list-style-type: none"> 1. Conducting joint activities with employers on the development of OP (round tables, presentations, master classes, fairs, etc.). 2. Development of modular work training programs with interested parties. 3. Coordination of joint activities with strategic partners in important and promising areas of OP development. 	<p>September-May 2021-2022 september-May 2022-2023 september-May 2023-2024</p> <p>April-May 2021-2022 april-May 2022-2023 april-May 2023-2024</p> <p>September-May 2021-2022 september-May 2022-2023 september-May 2023-2024</p>
4	Develop tasks to improve qualification requirements	<ol style="list-style-type: none"> 1. Expansion of general pedagogical and psychological knowledge of teachers. 2. Stimulating teachers to improve pedagogical skills. 3. Development of skills for the use of innovative teaching technologies in professional activities. 	On a regular basis
5	Creation of a PPP development program	<ol style="list-style-type: none"> 1. Determine the degree of readiness of the teaching staff to perform their functional duties. 2. Familiarization with the adaptation program. 3. Develop a personal development plan for teaching staff. 	<p>May-June 2021-2022 may-June 2022-2023 may-June 2023-2024</p> <p>September 2021-2022 september 2022-2023 september 2023-2024</p>
6	Creating conditions for academic mobility of teachers and students.	<ol style="list-style-type: none"> 1. Information support. 2. Expert support (assessment of the quality of education, assessment of the usefulness of the chosen course within the framework of an individualized educational trajectory). 3. Organizational support (assistance in establishing contacts with other universities). 	<p>September-May 2021-2022 september-May 2022-2023 september-May 2023-2024</p>
7	Conducting guest lectures and seminars.	<ol style="list-style-type: none"> 1. Create a plan of guest lectures. Inviting foreign lecturers to give lectures. 	<p>According to a separate plan</p> <p>September-May 2021-2022 september-May 2022-2023 september-May 2023-2024</p>
8	Introduction of innovative technologies into the content of the educational process.	<ol style="list-style-type: none"> 1. The use of interactive learning technologies. 2. Using project-based learning technology. 	On an ongoing basis

9	Organization of work with doctoral students on problematic scientific issues of the scientific and technical seminar.	Publication of articles in collaboration with the supervisor. Implementation of research results in the practice of the educational process.	According to a separate plan September-May 2021-2022 september-May 2022-2023 september-May 2023-2024
10	Increasing the scientific potential of teaching staff implementing OP 6B06101 - "Information systems"	<p>1. Increase the share of publications in journals recommended by the KKSON of the Ministry of Education and Science of the Republic of Kazakhstan.</p> <p>2. Increase the share of publications in foreign journals with a non-zero impact factor.</p> <p>3. Development and publication by teachers of the department of educational, scientific and methodological literature for bachelor's degrees.</p> <p>4. Activation of relations with foreign partners in order to implement joint research and publication of educational and methodological literature</p>	<p>According to the individual PPP plan.</p> <p>September-May 2021-2022 september-May 2022-2023 september-May 2023-2024</p> <p>According to a separate plan</p> <p>September-May 2021-2022 september-May 2022-2023 september-May 2023-2024</p>

4. Measures to reduce the risks of DANGEROUS

When implementing educational programs to reduce risks, the following measures are applied:

№ п/п	Name of possible risks	Risk reduction measures
1	Aging of university teaching staff (the average age of university teachers is 43.6 years, and the average age of settled teachers is within fifty years)	Development of measures to involve talented young people in the ranks of teaching staff, increase the prestigious and attractive work of a scientist and teacher
2	Changes in the moral and psychological climate in the team: changes in individual or group psychology, changes in personal relationships between managers	Improving the management system at the university

5. Quality monitoring of OP

№	Name of the event	Dates of the event	Responsible for execution
1	- Monitoring the quality of the educational program:	December 2021-2022 december 2022-2023 december 2023-2024	Dean 's Office Head of the Department, advisors
1.1	- - Internal - (survey of students)		
1.2	- External (survey of employers and the public sector, evaluation of graduates in the employers' community)	February-April 2021-2022 february-April 2022-2023 february-April 2023-2024.	
2	UMKD examination	September-December 2021-2022 september-december 2022-2023 september-december 2023-2024	Head of the Department, UMB faculty
3	Analysis of the results of boundary control, examination sessions	according to the academic calendar.	Head of the Department Advisors
4	Analysis of the results of the final certification	June 2021-2022 june 2022-2023 june 2023-2024	Head of the Department, Teaching staff of the department
5	Conducting open classes	According to the plan of conducting open classes.	Head of the Department, Teaching staff of the department
6	Mutual attendance of classes, discussion of results at meetings of the department	According to the schedule of mutual visits and the work plan of the department.	Head of the department, faculty of the department

