NJSC SHAKARIM UNIVERSITY OF SEMEY

EDUCATIONAL PROGRAM

7M07 - Engineering, Manufacturing and Civil engineering
(Code and classification of the field of education)

7M071 - Engineering and engineering trades
(Code and classification of the direction of training)

0710
(Code in the International Standard Classification of Education)

M100 - Automation and control
(Code and classification of the educational program group)

7M07102 - Automation and control
(Code and name of the educational program)

Master
(Level of preparation)

Semey

Educational program

7M07 -- Engineering, manufacturing and construction industries
(Code and classification of the field of education)

7M071 - Engineering and Engineering affairs
(Code and classification of the direction of training)

0710
(Code in the International Standard Classification of Education)

M100 - Automation and control
(Code and classification of the educational program group)

7M07102 - Automation and Control
(Code and name of the educational program)

Master
(Level of preparation)

Semey 2024

PREFACE

Developed

The educational program 7M07102 - Automation and Control in the direction of preparation 7M071 - Engineering and Engineering affairs on the basis of the State Compulsory Standards of Higher and Postgraduate Education approved by the Order of the Ministry of Science and Higher Education of the Republic of Kazakhstan dated July 20, 2022 No 2 (as amended by the order) was developed by the Academic Committee dated 20.02.2023 No 66).

Members of the Academic Committee	Full name	Academic degree, academic title, position
Head of the Academic Committee	Kozhakhmetova Dinara	Dean of the Higher School of Artificial Intelligence and Construction
Educational program manager	Ospanov Yerbol	Associate Professor
Member of the AC	Zolotov Alexander	Associate Professor
Member of the AC	Bekbayeva Roza	Head of the Department of IT technology
Member of the AC	Kdirbayev Ayan	Director of RTS -montazh LLP
Member of the AC	Kolbin Maxim	Director of "Special Installation Project" LLP
Member of the AC	Musina Darina	1st year undergraduate student

Reviewing

Full name of the reviewer	Position, place of work
Shpuntov Evgeny	Director of Reltech LLP
Turagulov Rasul	Joint Stock Company " Semey Engineering"

Reviewed

at the meeting of the Commission on Academic Quality of the Faculty of Engineering and Technology
Protocol No. 3 January 15, 2024

at the meeting of the Commission on Academic Quality of the Higher School of Artificial Intelligence and Construction
Recommended for approval by the Academic Council of the University
Protocol No. 1, "6" June 2024

Approved

at a meeting of the University Academic Council by protocol No. 6/1 of January 19, 2024.

at a meeting of the University Academic Council by protocol No. 11 of June 28, 2024.

Content

1.Introduction

1.1.General data

The OP was developed taking into account the needs of the regional labor market, the requirements of regulatory documents of the Ministry of Science and Higher Education of the Republic of Kazakhstan and is a system of documents for the organization of the educational process.

Having mastered this educational program, graduates acquire the skills and abilities of theoretical and experimental research in complex engineering activities in the field of automation and control and mechatronics; to apply progressive methods of operation of automation and control systems equipment, to apply modern methods for the development of energy- saving and environmentally friendly automation and control systems that ensure the safety of human life and their protection from possible consequences of accidents, catastrophes and natural disasters, to acquire knowledge and skills focused on the creation of robots and robotics systems that have elements of artificial intelligence.

The novelty of this program is its meaningful uniqueness, which consists in the ability to combine the design and programming in one course of both control systems built on a modern element base, and the study of mechatronics - an applied science engaged in the development and operation of intelligent automated technical systems for their implementation in various spheres of human activity. Graduates of this educational program will master new means and methods of design, such as methods of artificial intelligence, digital information processing, modeling of complex dynamic systems and many others.

When implementing the educational program, it is planned to use artificial intelligence tools in the educational process, thereby developing digital competencies among students in a rapidly changing technological environment.

The educational program provides for the education of a student with special educational needs in the conditions of a higher educational institution, as well as his socialization and integration into society.

1.2.Completion criteria

The main criterion for the completion of the educational process for the preparation of masters of the scientific and pedagogical direction is the development of at least 88 credits of theoretical training, including 6 credits of pedagogical practice, 13 credits of research practice, as well as at least 24 credits of research work of a master`s student, including internships and the completion of a master`s thesis, at least 8 credits of the final attestations . A total of 120 credits.

1.3.Typical study duration: 2 years.

2.PASSPORT OF THE EDUCATIONAL PROGRAM

2.1.EP purpose	Training masters of engineering for work in the field of automation, information and control in technical, technological systems associated with the use of tools and methods for processing information for management in all areas of production and in the field of research and teaching
2.2.Map of the training profile within the educational program	
Code and classification of the field of education	7M07 - Engineering, manufacturing and construction industries
Code and classification of the direction of training	7M071 - Engineering and Engineering affairs
Code in the International Standard Classification of Education	0710
Code and classification of the educational program group	M100 - Automation and control
Code and name of the educational program	7M07102 - Automation and Control
2.3.Distinctive features of the OP (double degree/joint, OVPO-partner, Double major, innovative)	1. In-depth study of automation 2. Innovative technologies. 3. Professional adaptation 4. Practical orientation 5. Research component
2.4.Qualification characteristics of the graduate	
Degree awarded / qualification	Master of Technical Sciences, specialty 7M07102 - Automation and Controler of Technical Sciences in the specialty M10001 -
Name of professional standard	1. Cloud technology development 2. Management and design of computer hardware and embedded systems 3. Business intelligence and project management FROM 4.Technical support of electronics 5. Teacher (faculty) of organizations of higher and (or) postgraduate education
Atlas of new professions	Absent
Regional standard	Absent
Name of the profession / list of positions of a specialist	Engineer in organizations and enterprises that use and develop automated control systems for technological processes and production, automated information and control systems for various purposes, automated systems for receiving, processing and transmitting data for various purposes, automated systems for designing systems. Teacher of state and non-state secondary, specialized secondary and higher educational institutions, researcher of research and other organizations of any form of ownership
OQF qualification level (industry qualification framework)	7
Area of professional activity	Graduates are prepared to work in the field of automation, informatization and management in

	technical systems, technological systems, systems related to the use of information processing tools and methods for management in all areas of production, in the field of research and teaching
Object of professional activity	Automated control systems for technological processes of various industries, automated information and control systems for various purposes, automated systems for receiving, processing and transmitting data for various purposes, automated systems for designing systems, research institutes, research and production associations of any form of ownership, state and non-state educational institutions of any level
Types of professional activity	Creation and operation of automated production management systems; development of methods for analysis, forecasting and management of technological processes, technical systems and high-tech research facilities, research activities, pedagogical activities, educational activities. Types of professional activity * production and technological activities * organizational and managerial activities • design and engineering activities • research activities * teaching activities * educational activities
2.5.Graduate Model	The personal qualities of a graduate that must be possessed in order to be a competitive specialist in the field of Automation and management: - Analytical skills: the ability to conduct a systematic analysis of information; systematize information; compare data; abstract information; design the result. - Diagnostic skills: the ability to structure the information received; to implement innovative and combinational processes related to the ability to predict. - Verbal and non-verbal skills: the ability to build business relationships with colleagues; establish cooperation with partners; formulate professional tasks; master oral and written speech. - Predictive skills: confidence in one`s own actions in accordance with the assessment of everything that is happening; manifestation of extroversion and dominance as a condition of purposefulness, management, information modeling, energy mobilization, perseverance, activity, ability to withstand the load, perseverance when performing complex tasks. - Correctional skills: the ability to carry out self-analysis, self-correction; to determine the trajectories of self-development and self-education; to comprehend their own professional and personal capabilities.

3.Modules and content of the educational program

Module 1. Sociolinguistic and scientific-pedagogical activities

Brief description of the module content

Promotes the formation of sociolinguistic competence and the application of fundamental scientific, pedagogical, managerial, communication knowledge and skills in professional activities.

Module disciplines

Foreign language (professional)

History and philosophy of science

Higher Education Pedagogy

Psychology of management

Pedagogical practice

Module 2.Data processing and presentation

Brief description of the module content

The module "Data processing and presentation" in the educational program «Automation and control» teaches students methods of data analysis and interpretation using modern software tools. Students learn basic information processing techniques, including statistical analysis, data visualization, and building mathematical models to optimize management decisions.

Module disciplines

Organization and planning of scientific research

Pulse and digital control system

Methods of research and processing of experimental data

Methods for analyzing and processing big data

Fundamentals of scientific work and the theory of solving inventive problems

Basics of scientific research, organization and planning of the experiment

Fundamentals of the system approach and system analysis

Control systems for technical objects

Digital signal processing in information management systems

Modern methods and means of creating automated control systems

Modern computer systems ACS TP

Module 3.Artificial Intelligence Systems

Brief description of the module content

The module "Artificial intelligence systems" in the educational program «Automation and control» is designed to study the basic methods and technologies in the field of artificial intelligence. Students learn the principles of machine learning, neural networks and deep learning algorithms necessary for the development of automated systems and optimization of management processes.

Module disciplines

Research work of the undergraduate, including the implementation of the master s thesis I

Fuzzy control systems

Basics of operations research

Distributed computer information and control systems

Robust automatic control systems

Robotic systems

Neural network

Systems of artificial intelligence in management

Module 4.Intelligent System Design

Brief description of the module content

The module «Design of intelligent systems» in the educational program «Automation and control» covers the study of methods for creating and integrating intelligent solutions into technical and managerial processes. Students learn the

principles of developing algorithms and models necessary for automating data-based decision-making and optimizing production and management systems.

Module disciplines

Integrated design and control systems

Integrated production management systems

Control methods intelligent systems technical support of integrated and distributed control systems

Automation of technical systems

Computer-aided design of tools and control systems

Diagnostics and reliability of AISU

Intelligent control systems

Mechatronic systems in robotics

Reliability of technical systems

Research work of the undergraduate, including the implementation of the master s thesis II

Software and hardware of modern ACS

Design of automated information processing and management systems

Design of systems on a chip

Industrial robot control systems

Research practice

Research work of the undergraduate, including the implementation of the master s thesis III

Final certification

Brief description of the module content

Writing and defending a master`s thesis.

Module disciplines

Master`s dissertation

4.Summary table on the scope of the educational program

«7M07102 - Automation and Control»

Name of discipline	Cycle/ Component	Term	Number of credits	Total hours	Lec	SPL	LC	IWST	IWS	Knowledge control form
Module 1. Sociolinguistic and scientific-pedagogical activities										
Foreign language (professional)	BS/US	1	3	90		30		20	40	Examination
History and philosophy of science	BS/US	1	5	150	15	30		35	70	Examination
Higher Education Pedagogy	BS/US	1	3	90	15	15		20	40	Examination
Psychology of management	BS/US	1	3	90	15	15		20	40	Examination
Pedagogical practice	BS/US	3	6	180						Total mark on practice
Module 2.Data processing and presentation										
Organization and planning of scientific research	BS/CCh	1	5	150	30	15		35	70	Examination
Pulse and digital control system	BS/CCh	1	5	150	30	15		35	70	Examination
Methods of research and processing of experimental data	BS/CCh	1	5	150	30	15		35	70	Examination
Methods for analyzing and processing big data	BS/CCh	1	5	150	30	15		35	70	Examination
Fundamentals of scientific work and the theory of solving inventive problems	BS/CCh	1	5	150	30	15		35	70	Examination
Basics of scientific research, organization and planning of the experiment	BS/CCh	1	5	150	30	15		35	70	Examination
Fundamentals of the system approach and system analysis	BS/CCh	1	5	150	30	15		35	70	Examination
Control systems for technical objects	BS/CCh	1	5	150	30	15		35	70	Examination
Digital signal processing in information management systems	BS/CCh	1	5	150	30	15		35	70	Examination
Modern methods and means of creating automated control systems	AS/CCh	2	5	150	30	15		35	70	Examination
Modern computer systems ACS TP	AS/CCh	2	5	150	15	30		35	70	Examination
Module 3.Artificial Intelligence Systems										
Research work of the undergraduate, including the implementation of the master s thesis I	AS/US	2	11	330						Total mark on practice
Fuzzy control systems	AS/CCh	2	5	150	30	15		35	70	Examination
Basics of operations research	AS/CCh	2	5	150	30	15		35	70	Examination
Distributed computer information and control systems	AS/CCh	2	5	150	30	15		35	70	Examination
Robust automatic control systems	AS/CCh	2	5	150	15	30		35	70	Examination
Robotic systems	AS/CCh	2	5	150	15	30		35	70	Examination
Neural network	AS/CCh	3	5	150	15	30		35	70	Examination
Systems of artificial intelligence in management	AS/CCh	3	5	150	15	30		35	70	Examination

Module 4.Intelligent System Design										
Integrated design and control systems	AS/CCh	2	5	150	30	15		35	70	Examination
Integrated production management systems	AS/CCh	2	5	150	30	15		35	70	Examination
Control methods intelligent systems technical support of integrated and distributed control systems	AS/CCh	2	5	150	30	15		35	70	Examination
Automation of technical systems	AS/CCh	3	5	150	15	30		35	70	Examination
Computer-aided design of tools and control systems	AS/CCh	3	5	150	15	30		35	70	Examination
Diagnostics and reliability of AISU	AS/CCh	3	5	150	15	30		35	70	Examination
Intelligent control systems	AS/CCh	3	5	150	15	30		35	70	Examination
Mechatronic systems in robotics	AS/CCh	3	5	150	15	30		35	70	Examination
Reliability of technical systems	AS/CCh	3	5	150	15	30		35	70	Examination
Research work of the undergraduate, including the implementation of the master s thesis II	AS/US	3	4	120						Total mark on practice
Software and hardware of modern ACS	AS/CCh	3	5	150	15	30		35	70	Examination
Design of automated information processing and management systems	AS/CCh	3	5	150	15	30		35	70	Examination
Design of systems on a chip	AS/CCh	3	5	150	15	30		35	70	Examination
Industrial robot control systems	AS/CCh	3	5	150	15	30		35	70	Examination
Research practice	AS/US	4	13	390						Total mark on practice
Research work of the undergraduate, including the implementation of the master s thesis III	AS/US	4	9	270						Total mark on practice
Final certification										
Master`s dissertation		4	8	240						

NON -PROFIT LIMITED COMPANY «SHAKARIM UNIVERSITY OF SEMEY»

THE DEVELOPMENT PLAN OF THE EDUCATIONAL PROGRAM
7M07102 - "Automation and control"
for 2024-2026

Semey 2024.

Content

1. Passport of the Bachelor's/Master's Degree Educational Program Development Plan 7M07102 - "Automation and control"

1	The basis for the development	Development program of the Non -Profit Limited Company «Shakarim University of Semey» for 2023-2029. School work plan
3	Terms of implementation	2024-2026 j.
4	Expected results of implementation	Training of competitive specialists who possess the skills and abilities of organizational and managerial, scientific and design activities in the field of automation and control and mechatronics using theoretical, practice-oriented and scientific and educational approaches.

2. Analytical justification of the educational program

2.1 Information about the educational program

The educational program has been developed in accordance with the National Qualifications Framework and Professional Standards, according to the Dublin Descriptors and the European Qualifications Framework. The term of mastering the Master's degree program is 2 years.

The main criterion for the completion of the educational process is the development of at least 120 credits, with the award of a Master of Technical Sciences degree in the educational program 7M07102 - Automation and Control. The educational program "Automation and Management", implemented by the IT Technologies of the Graduate School Artificial Intelligence and Construction of Semey Shakarim University, was developed taking into account the needs of the regional labor market, the requirements of regulatory documents of the Ministry of Science and Higher Education of the Republic of Kazakhstan and is a system of documents for the organization of the educational process. It reflects the features of the objectives of the master's degree program, which allow to develop innovative thinking, master advanced technologies in the field of automation and control, provide consulting services in complex engineering activities in the field of automation and control and mechatronics, apply progressive methods of operation of automation and control systems equipment, apply modern methods for the development of energy-saving and environmentally friendly systems automation and control, ensuring the safety of human life and their protection from the possible consequences of accidents, catastrophes and natural disasters, obtaining knowledge and skills focused on the creation of robots and robotic systems with elements of artificial intelligence .

The content of the educational program is implemented through a curriculum developed in a modular format, which provides two cycles of disciplines: a cycle of basic disciplines and a cycle of core disciplines, as well as additional types of training (practice, research work).

2.2 Information about students

Academic yearОснова обучения	2025-2026 Academic year	2026-2027 Academic year
Grant	3	3
Contract	5	5
Total	8	8

2.3 Internal and external conditions for the development of the educational program

For the development and implementation of the educational program 7M07102 - "Automation and control"
, the department has created favorable and optimal conditions such as:
- highly qualified teaching staff (settling down -100%);
- high material and technical equipment of the OP;
- training in 3 languages (state, Russian and English);
- modern educational and methodological base, with students' access to information and analytical resources;
-the use of modern and interactive learning tools;
- academic mobility (external and internal);
-high-quality professional infrastructure (educational resources);
-contracts have been concluded with the Research Institute for internships and internships of undergraduates.

2.4 Information about teaching staff implementing the educational program

№	Indicators	Unit of measurement.	2024-2025 Academic year	2025-2026 Academic year
1	The share of teaching staff with an academic degree in EP	%	**100**	**100**
2	Including the share of teaching staff with a degree in the cycle of Basic disciplines/University Component	%	**100**	**100**

2.5 Characteristics of the achievements of the EP

According to the educational program 7M07102 - "Automation and control" there are achievements such as:
- defense of doctoral dissertations by PhD teachers of the Department Ospanov E.A., Kozhakhmetova D.O.,;
- participation of teaching staff on the OP in research on grant financing of the KN of the Ministry of Internal Affairs of the Republic of Kazakhstan:

1. " Selection of process parameters based on the production of wear-resistant coatings by cold gas-dynamic spraying of composite powders and computer modeling."
2. " Development of the Smart City digital service, a software product for transparent, high-quality and affordable provision of all services in the housing and communal services sector "
3. International project under the Erasmus+ program "Kaz Dual – introduction of a dual system in Kazakhstan"
4. GeKaVOC project (Transfer of dual trainings on logistics, mechatronics and sustainable energy in Kazakhstan);

- high material and technical equipment of the OP;
- training in 3 languages (state, Russian and English);

- modern educational and methodological base, with students' access to information and analytical resources;
-the use of modern and interactive learning tools;
- academic mobility (external and internal);
-high-quality professional infrastructure (educational resources);
-conclusion of an agreement with the Research Institute for internships and internships of undergraduates.

3. The main objectives of the EP development plan

The educational program 7M07102 - "Automation and management" was developed based on the request of employers.

The main goal of the OP and its development is its improvement in accordance with the vision, mission and strategy of the university aimed at training highly qualified, competitive personnel, improving the quality of knowledge, forming a multi-level system of research activities in accordance with the current needs of modern education and science, transformation into an innovative world-class university.

The main objectives of the development plan are the following::

№	Task name	Terms of development	Stages of development
1	Providing conditions for obtaining a full-fledged, high-quality professional education	2024-2026	Development of measures to improve the quality of educational services for the development of professional skills of future specialists
2	Formation of the main professional competencies of future specialists	2024-2026	Updating the content of the OP. Acquisition of professional competencies in the field of Automation and management
3	The ability to work with scientific and technical information, use domestic and foreign experience in professional activities, systematize and summarize the information received	2024-2026	Development of measures for the analysis and processing of the results obtained
4	Consultation of scientists of the Research Institute in the selection of relevant and practically significant topics of master's theses	2024-2026	Consultations of interested parties

4. Risk analysis of the educational program

№	Name of risks	Measures to eliminate
1	Reduction of the contingent of students in the EP	Formation of a contingent of students through career guidance and information and advertising work, creation of multilingual learning groups
2	Insufficient level of language knowledge for the introduction of trilingual education	Plan English language courses for teaching staff
3	Insufficient development of external and internal academic mobility of undergraduates and teaching staff	Conclusion of contracts with universities for external and internal academic mobility of undergraduates and teaching staff
4	Insufficient provision of educational and methodological literature on professional disciplines in the state language	Plan the annual release of scientific and educational literature in the state language by scientists and teaching staff

5. Action plan for the development of the EP

№	Criteria	Expected results	Unit of measurement	2023-2024	2024-2025
Direction 1. Educational and methodological support					
1.1	Updating the educational program based on professional standards, taking into account the recommendations of employers	Conducting an examination of the Educational program "7M07102 - "Automation and control" in order to improve the practice orientation and development of professional competencies of graduates	факт.	**1**	**1**
1.2	Monitoring and updating catalogs of elective disciplines in accordance with the development of key and professional competencies, the demands of the labor market	Improving the quality of the content of educational programs by including elective courses aimed at developing the key and professional competencies of graduates in accordance with the demands of the labor market.	факт.	**1**	**1**
1.3	Introduction of modern learning technologies into the educational process, contributing to the development of cognitive activity, communicative ability of students	Improving the quality of teaching academic disciplines, taking into account the novelty and diversity of forms of work that contribute to the development of cognitive activity.	факт.	**1**	**1**

1.3.1	Introduction of mass open online courses (MOOC) on educational 7M07102 - "Automation and management" into the educational process	Introduction of disciplines into the educational process Improving the quality of teaching academic disciplines, taking into account the novelty and diversity of forms of work that contribute to the development of cognitive activity.	unit.	**-**	**-**
1.4	Involvement of social partners and employers in the development, examination of the implementation of educational programs	Improving the quality of educational programs implemented taking into account market demands and recommendations of employers	unit.	**1**	**1**
1.5	Development and implementation of elective courses in English	Introduction of disciplines in English into the educational process	unit.	**-**	**-**
1.6	Conducting seminars and round tables on the application of innovative technologies in the educational process	Introduction of innovative technologies in the educational process	unit.	**-**	**-**
1.7	Publication of educational, methodical and scientific literature on the implemented EP	Improvement of educational and methodological support in the disciplines of the implemented educational programs	unit.	**1**	**1**
1.8	Conclusion of contracts with foreign and domestic partner universities in order to develop academic exchange of students of all levels and teaching staff	Creation of a database of foreign and domestic partner universities for the development of academic exchange of students of all levels and teaching staff	unit.	**1**	**1**
1.9	Inviting students from partner universities to study for a semester, short-term internships, internships, etc..	Development of international recognition of educational programs, implementation of academic mobility programs for students	human	**-**	**-**
1.10	Participation of teaching staff and students in international academic exchange programs	Development of international cooperation with foreign universities implementing educational programs in the direction 7M07102 - "Automation and control"	human	**1**	**1**

1.11	Development of outgoing academic mobility of teaching staff and students in the direction 7M07102 - "Automation and control"	Improving the educational program based on the experience of implementing such programs in leading universities of the Republic of Kazakhstan	human	-	-
Direction 2. Teaching staff					
2.1	Professional development and training of scientific and pedagogical personnel for the implementation of educational programs once every 5 years	The share of teaching staff who have passed advanced training at the national level is at least 20%	human	**1**	**1**
2.2	Advanced training, retraining, internships of teaching staff at the international level	Completion of at least 2 teachers of the advanced training program, retraining, internships of teaching staff at the international level	human	-	-
2.3	Promotion of publications of the works of teaching staff in international publications indexed by the Web of Science and Scopus databases	Increase in the share of teaching staff who have published the results of scientific research in publications indexed by the Web of Science and Scopus databases – at least 30% of the total number of teaching staff	%	**1**	**1**
2.4	Involvement of practical specialists in teaching and scientific activities	Participation in the implementation of educational programs of practitioners (at least 20% of specialists)	%	-	-
Direction 3. Internationalization of educational programs					
3.1	Conclusion of agreements on international cooperation with foreign universities	Implementation of joint projects, preparation of scientific publications with foreign partners, creation of bases for scientific internships of students	unit.	**1**	**1**
3.2	Attracting foreign students to study under the educational program "7M07102 - "Automation and control"	Increasing the number of foreign students	unit.	-	-

3.3	Organization of joint scientific and practical events with international partners	Improving the efficiency of scientific and methodological activities of teaching staff, exchange of experience with foreign partners	unit.	**-**	**-**
3.4	Invitation of foreign specialists to give lectures and consultations on master's projects and dissertations	Improvement of the content component of educational programs based on the introduction of the experience of foreign specialists in the implementation of educational programs	unit.	**1**	**1**
3.5	Expansion of cooperation with Leading foreign scientific and educational organizations in order to attract the most qualified foreign specialists to the implementation of educational programs	Formation of key and professional competencies in accordance with the practice of leading universities	human	**-**	**-**
Direction 4. Logistics and digitalization					
4.1	Step-by-step equipping of classrooms with technical training tools (projectors, panels, interactive and multimedia whiteboards, multifunction devices, webcam, projector screen, etc.)	Equipping classrooms assigned to the department with technical training tools (projectors, panels, interactive and multimedia whiteboards, multifunctional devices, webcam, projector screen, etc.)	unit.	**-**	**1**
4.2	Automation of the educational process (testing, session management, student contingent movement, dean's office, department, teaching staff workload, schedule, library, syllabuses)	Information management based on the automation of the educational process (testing, session management, student body movement, dean's office, department, teaching staff workload, schedule, library, syllabuses)	fact.	**1**	**1**
4.3	Replenishment of the full-text database of research results of teaching staff and students, teaching staff (articles, monographs, etc.)	Increase in the number of results of scientific works of scientists, research of teaching staff and students, teaching staff (articles, monographs, etc.)	unit.	**10**	**10**
4.4	Expansion of the fund of scientific and educational literature, including on electronic media for implemented educational programs	Ensuring the implementation of educational programs based on modern educational and information resources, including on electronic media	%	**1**	**1**

4.5	Monitoring the content and improvement of the faculty's website	Formation of the faculty's website on various aspects of the implementation of educational programs.	%	**1**	**1**

Head of the Department _____ **Bekbayeva R.S.**

REVIEWED

at the meeting of the Commission on Academic Quality
Graduate School Artificial Intelligence and Construction
Minutes of the meeting № 1 «06» 06. 2024
Chairman CAQ _____ Adylkanova A.Zh.

AGREED

Dean _____ Kozhahmetova D.O.
«06» 06. 2024