Joint Stock Company "Academy of Logistics and Transport"

APPROVE
US ALT decision dated
March 30, 2023 (Protocol №7)
President-Rector
Amirgalieva S.N.

EDUCATIONAL PROGRAM

Name: 7M07144 – «Automation and control»

Level of training: master's degree in scientific and pedagogical

Code and classification of training areas: 7M071-«Engineering and Engineering»

Code and group of educational programs: M100-«Automation and control»

Date of registration in the Registry: 06.05.2021

Registration number: 7M07100395

Almaty, 2023

CONTENT

1. СВЕДЕНИЯ О РАССМОТРЕНИИ, СОГЛАСОВАНИИ И УТВЕРЖДЕНИИ ПРОГРАММЫ, РАЗРАБОТЧИКАХ, ЭКСПЕРТАХ И РЕЦЕНЗЕНТАХ

РАЗРАБОТАНО:

к.т.н., ассоциированный профессор	_____ *(подпись)*	Сүлейменова Г.А.
Главный менеджер функционального направления по развитию и внедрению железнодорожной автоматики, Департамента по стратегическому развитию систем ЖАТ/SCADA, АО «НК «ҚТЖ» - «Дирекция автоматизации и цифровизации»	_____ *(подпись)*	Батырханов М.Ш.
Сениор-лектор	_____ *(подпись)*	Садвакасова Ж.Д.
Сениор-лектор	_____ *(подпись)*	Шукаманов Ж.Е.
Студент гр. МН-АУ-22-1	_____ *(подпись)*	Воронцова Р.А.

ЭКСПЕРТЫ:

Менеджер функционального направления по развитию и внедрению железнодорожной автоматики филиала АО «НК «ҚТЖ» - «Дирекция автоматизации и цифровизации»	_____ *(подпись)*	Оразбаев К.Ж.
PhD, ассоциированный профессор кафедры «Программной инженерии», Satbayev University	_____ *(подпись)*	Мукажанов Н.К.

РЕЦЕНЗЕНТ:

Заместитель главного технолога ТОО «Корпорация Сайман»	_____ *(подпись)*	Нурмагамбетов М.А.

REVIEWED AND RECOMMENDED

Meeting of the Department «Automation and Control» Protocol № 6 dated 24.02.2023	*(signature)*	Sansyzbay K.M.
Meeting of the COC of the UMB Institute «Automation and Telecommunications» Protocol № 4a of 27.03.2024	*(signature)*	Toygozhinova A.Zh.
UMS ALT meeting Protocol № 4a of 29.03.2023	*(signature)*	Zharmagambetova M.S.

APPROVED by the decision of the ALT Academic Council of 30.03.2023 (Protocol № 7)

UPDATED 28.07.2023

2. REGULATORY REFERENCES

The educational program has been developed on the basis of the following regulatory legal acts and professional standards:

1. The Law of the Republic of Kazakhstan "On Education" dated July 27, 2007 No. 319-III (with amendments and additions as of March 27, 2023).

2. The National Qualifications Framework approved by the Protocol of March 16, 2016 by the Republican Tripartite Commission on Social Partnership and Regulation of Social and Labor Relations.

3. The sectoral qualifications framework of the field of "Education", approved by the Minutes of the meeting of the sectoral Commission of the Ministry of Education and Science of the Republic of Kazakhstan on social partnership and regulation of social and labor relations in the field of education and science dated November 27, 2019 No.

4. State mandatory standard of higher and Postgraduate education (Order of the Minister of Science and Higher Education of the Republic of Kazakhstan dated February 20, 2023 No. 66).

5. Qualification directory of positions of managers, specialists and other employees, approved by the Order of the Minister of Labor and Social Protection of the Population of the Republic of Kazakhstan dated August 12, 2022 No. 309.

6. Professional standard "Teacher", approved by the Order of the Chairman of the Board of the National Chamber of Entrepreneurs of the Republic of Kazakhstan "Atameken" No. 500 dated December 15, 2022.

7. Rules for the organization of the educational process on credit technology of education in organizations of higher and (or) postgraduate education, approved by Order of the Minister of the Ministry of Education and Science of the Republic of Kazakhstan No. 152 dated 20.04.2011. (with additions and amendments dated April 04, 2023 No. 145).

8. Classifier of training areas with higher and postgraduate education, approved by the Order of the Minister of Education and Science of the Republic of Kazakhstan dated October 13, 2018 No. 569 (with amendments and additions as of June 05, 2020).

10. The algorithm of inclusion and exclusion of educational programs in the Register of educational programs of higher and postgraduate education, approved by the Order of the Minister of Education and Science of the Republic of Kazakhstan dated December 4, 2018 No. 665 (with additions and amendments as of December 23, 2020 No. 536).

11. RI-ALT-33 "Regulations on the procedure for developing an educational program of higher and postgraduate education".

3. PASSPORT OF THE EDUCATIONAL PROGRAM

№	Field name	Note
1	Registration number	7M07100395
2	Code and classification of the field of education	7M07 Engineering, manufacturing and construction industries
3	Code and classification of training areas	7M071 Engineering and Engineering
4	Code and group of educational programs	M100 – Automation and control
5	Наименование образовательной программы	7M07144 – Automation and control
6	Type of EP	Current
7	The purpose of the EP	Training of highly qualified specialists with research, pedagogical and professional competencies related to the development, design, operation of various automation and telemechanics systems in railway transport
8	ISCED level	7
9	Level according to NQF	7
10	ORK level	7
11	Distinctive features of the EP	No
	Partner university (SOP)	
	Partner university (DDOP)	
12	Form of study	Full-time
13	Language of instruction	Kazakh, Russian
14	Volume of loans	120
15	Academic degree awarded	Master of Technical Sciences in educational program 7M07144 – "Automation and Control"
16	Availability of an annex to the license for the direction of personnel training	KZ12LAA00025205 (004)
17	Availability of EP accreditation	Available
	Name of accreditation body	NU "Independent Agency for Accreditation and Rating" (IAAR)
	Validity period of accreditation	27.05.2021 – 26.05.2026

4. Competence model of a graduate

Objectives of the educational program:

1. Training of specialists with a high level of professional culture, including a culture of professional communication, who have a civic position, are able to formulate and solve modern scientific and practical problems, and successfully carry out pedagogical, research and management activities.

2. Master's students master the most important and sustainable knowledge, ensuring a high level of intellectual development, mastery of moral, ethical and legal norms, a culture of thinking, development of creative potential, initiative and innovation.

3. Mastering by undergraduates fundamental courses at the intersection of sciences, guaranteeing them professional mobility.

4. Acquisition of research skills by students, participation in research activities at various levels, continuation of scientific training in PhD doctoral studies.

5. Obtaining by graduates the required level of knowledge in the field of university pedagogy and psychology and teaching experience at a university.

Learning outcomes:

ON1 – Apply the skills of personnel management, production, management psychology, strategic management and information support of business research

ON2 – Apply the results of scientific research in the form of reports, abstracts, public discussions, including in a foreign professional language.

ON3 – To determine the procedure for organizing various types of dispatching control and control of microprocessor systems in railway transport.

ON4 – Possesses methods of analysis and synthesis of digital automated systems using modern computer technology and scientific research in order to ensure information security.

ON5 – Analyze the current state of uninterruptible power supply systems, prospects for their development and scientific and technical problems of ensuring reliable operation of automatic devices.

ON6 – To investigate methods of measurement and microprocessor diagnostics with subsequent monitoring of the state of railway automation and telemechanics devices.

ON7 – Apply and systematize methods for constructing microprocessor centralization and interval control systems, followed by an analysis of the operation of station and distillation devices of the SCB.

ON8 – Has methods of data mining in transport, based on the use of solutions, artificial neural networks, taking into account the infrastructure of cloud computing

ON9 – Integrate knowledge about the subject, ideological and methodological specifics of natural sciences and scientific concepts of world and Kazakh science

ON10 – Apply knowledge of the basics of higher school pedagogy and management psychology in professional activities

Area of professional activity: The area of professional activity of masters includes a set of technologies, means, methods and methods of activity aimed at creating and improving systems for automating technological processes.

Objects of professional activity: The objects of professional activity of masters are the fields of science and technology, which include a set of technologies, means, methods and methods of activity aimed at creating and improving systems for automating technological processes, including technological systems and technical means that ensure reliable and high-quality performance.

Types of professional activities:
- scientific and pedagogical;
- experimental research;
- organizational and managerial;
- design;
- production and technological;
- operational.

Functions of professional activity:

1) conducting group (seminar and laboratory) classes at a university or college in special disciplines using modern pedagogical methods and techniques;

2) carrying out scientific and innovative activities to create new applied knowledge in the professional field;

3) development of a feasibility study of design solutions (TES) for the implementation of automation systems;

4) installation, operation, service (technical support) and administration of railway automation and remote control;

5) providing technical support in the field of railway automation and telemechanics;

6) administration of the process of monitoring the performance of automation and telemechanics devices;

7) administration of the process of managing the safety of automation and telemechanics devices;

8) organization of monitoring, remote diagnostics and troubleshooting of equipment in automation and telemechanics systems.

List of specialist positions: manager in areas of automation and telemechanics (including administrative level); engineer (by category); electromechanic.

Professional certificates received upon completion of training: not provided.

Requirements for previous level of education: higher education (bachelor's degree).

The educational program of the scientific and pedagogical master's degree includes two types of internship:
- Pedagogical practice – in the organization of education;
- research practice – at the place where the dissertation was completed.

Pedagogical practice.

Pedagogical practice of master's students is practical training of future teachers, carried out in conditions as close as possible to the professional activities of a teacher. Pedagogical practice is aimed at the formation of functional competencies and the development of abilities to perform tasks in the professional and educational spheres. In the process of Pedagogical practice, the professional and personal development of future teachers is activated. During the internship, master's students draw up and implement a plan of educational activities with a group of students, develop and conduct a system of classes that reflect the completed segment of the learning process based on the content of their major disciplines, and demonstrate mastery of modern technologies and Pedagogical methods.

The purpose of Pedagogical practice is:
- consolidation and deepening of knowledge in general scientific, psychological-pedagogical, methodological, basic and core disciplines;

- formation of pedagogical abilities, skills and competencies based on theoretical knowledge.

The Pedagogical practice program is developed by the department and approved by the President-Rector of the Academy of Logistics and Transport.

The Pedagogical practice program should be aimed at developing professionally significant skills in students and the formation of key competencies:

- planning, forecasting, analysis of the main components of the training and education process;
- the use of various forms and methods of organizing and implementing educational, cognitive, labor, social, environmental, recreational, gaming and other types of activities for students;
- implementation of an individual approach to students during educational and educational work, taking into account the characteristics of their development;
- conducting pedagogical diagnostics of the state of the pedagogical process.

The bases for Pedagogical practice are educational organizations that provide secondary vocational education and higher education.

The duration of Pedagogical practice is determined by the curriculum of the educational program in the field of training 7M071 Engineering and Engineering.

Research practice.

Research practice is a type of research activity aimed at deepening and systematizing the theoretical and methodological training of a master's student, practical mastery of the technology of research activities, acquisition and improvement of practical skills in performing scientific and experimental work in accordance with the requirements for the level of master's training.

Research practice of students is carried out with the aim of familiarizing themselves with the latest theoretical, methodological and technological achievements of domestic and foreign science, with modern methods of scientific research, processing and interpretation of experimental data. The content of research practice is determined by the topic of the dissertation research.

The master's student's research practice is carried out at the place of study or in scientific organizations, which can be considered as experimental sites for conducting research related to the topic of the master's thesis. During the internship, master's students are given the opportunity to conduct experimental research according to a pre-developed program that takes into account the objectives of the master's thesis.

Research work of a master's student (RWMS).

Planning of research work in weeks is determined based on the standard time of work of the master's student during the week. The number of credits allocated for the implementation of scientific research work in a specific academic period is determined by the working curriculum of the professional educational program in the field of training 7M071 Engineering and Engineering.

RWMS should:

1) correspond to the main issues of the master's educational program on which the master's thesis is defended;

2) be relevant and contain scientific novelty and practical significance;

3) be based on modern theoretical, methodological and technological achievements of science and practice;

4) be based on modern methods of data processing and interpretation using computer technology;

5) be carried out using modern scientific research methods;

6) contain research (methodological, practical) sections on the main protected provisions.

The master's thesis is carried out during the period of scientific research.

Within the framework of RWMS, the individual work plan of a master's student for familiarization with innovative technologies and new types of production provides for mandatory

scientific internship in scientific organizations and (or) organizations of relevant industries or fields of activity.

The purpose of the research work is to prepare a master's student who is proficient in the methodology of scientific knowledge of processes and is able to apply scientific methods in the study of problems of modern production, the final result of whose research activity is the writing and successful defense of a master's thesis.

Objectives of the research work:

- to prepare highly qualified modern specialists with broad fundamental knowledge;
- develop the abilities and skills of undergraduates to critically analyze and master theoretical concepts in order to implement them in practice and with subsequent testing at the international level;
- to form in master's students the ability for professional growth and self-development, skills for independent creative mastery of new knowledge throughout their active life.

As a result of mastering the master's program, graduates should be prepared to perform the following types and tasks of professional research work:

- demonstrate a systematic understanding of the field of study, mastery of the skills and research methods used in this field;
- plan, develop, implement and adjust the complex process of scientific research;
- contribute with their own original research to expanding the boundaries of the scientific field, which may merit publication at the national or international level;
- critically analyze, evaluate and synthesize new and complex ideas;
- communicate your knowledge and achievements to colleagues, the scientific community and the general public;
- promote the development of a knowledge-based society.

Scientific internship is carried out for the purpose of:

- fulfilling the objectives of the master's thesis;
- familiarization with innovative technologies and new types of production;
- familiarization with the latest theoretical, methodological and technological achievements of domestic and foreign science;
- familiarization with modern methods of scientific research, processing and interpretation of experimental data;
- consolidation of theoretical knowledge acquired in the process of learning to acquire practical skills, competencies and professional experience, as well as mastering best practices in this field.

Requirements for RWMS:

1) compliance with the main issues of the master's educational program on which the master's thesis is defended;

2) is relevant and contains scientific novelty and practical significance;

3) is based on modern theoretical, methodological and technological achievements of science and practice;

4) is based on modern methods of data processing and interpretation using computer technology;

5) is carried out using modern scientific research methods;

6) contains research (methodological, practical) sections on the main protected provisions.

The Academy determines special requirements for the preparation of undergraduates for the research part of the program. Special requirements include:

- knowledge in the field of scientific and management activities in the conditions of constant updating of knowledge and modernization of society;
- conducting independent research activities on problems and disciplines;

- ability to practically process and transmit information using modern technical means;
- ability to predict directions of technical and scientific development of the country;
- possession of modern specialized skills and methods necessary for making effective decisions in the field of engineering and technology.

The main content of the scientific research work is reflected in the individual work plan of the master's student.

Contents of RWMS.

Research work of a master's student can be carried out in the following forms:

- fulfillment of tasks of the scientific supervisor in accordance with the approved research plan;
- participation in the research work of the department;
- participation in scientific and scientific-methodological seminars conducted by the Academy and the department;
- use of modern methods of data processing and interpretation using computer technologies;
- participation in the development of project documents and other provisions related to the subject area of scientific research;
- participation in scientific research, including joint scientific projects and programs;
- preparation and defense of a master's thesis.

The form of a master's student's research work can be specified and supplemented depending on the specifics of the master's program and the topic of the master's thesis.

The undergraduate research work includes:

- research work;
- scientific internship;
- scientific publications (participation in scientific conferences and seminars);
- writing a master's thesis.

Organizing a scientific internship as part of a master's student's research work

Scientific internship is one of the most important components in the preparation of master's degrees and is implemented in accordance with the IPRM within the time frame determined by the academic calendar and the individual work plan of the master's student.

The terms of the scientific internship are determined by the Academy independently. A scientific internship is usually planned during the second year of a master's degree.

The scientific internship of a master's student is carried out on the basis of agreements concluded with enterprises/organizations/institutions, universities and scientific organizations and leading scientists within the framework of Agreements and Memorandums of Cooperation in the field of education and science, as well as on the basis of personal invitations from educational and scientific organizations.

Completing training under exchange programs, including double degree programs, joint educational programs with foreign universities and organizations is equivalent to completing a scientific internship.

In case of failure to complete a scientific internship, a master's student is not allowed to take the final certification.

The final certification of the master's student is carried out in the form of writing and defending a master's thesis.

The purpose of the final certification of a master's student is to assess the scientific-theoretical and research-analytical level of the master's student, developed professional and managerial competencies, readiness to independently perform professional tasks and the compliance of his preparation with the requirements of the master's educational program.

Students who have completed the educational process in accordance with the requirements of the educational program, working curriculum and working educational programs, as well as those who have passed a preliminary defense (extended meeting) based on the results of dissertation research, are allowed to take part in the final certification.

5. MATRIX OF CORRELATION OF LEARNING OUTCOMES ACCORDING TO THE EDUCATIONAL PROGRAM WITH ACADEMIC DISCIPLINES/MODULES

№	Name of the discipline	Number of credits	Matrix for correlating learning outcomes in the educational program with academic disciplines									
			ON1	ON2	ON3	ON4	ON5	ON6	ON7	ON8	ON9	ON10
1	History and philosophy of science	5									+	
2	Foreign language (professional)	4		+								
3	Higher education pedagogy	5										+
4	Psychology of management	2										+
5	Pedagogical practice	4										+
6	Digital automated systems in railway transport	9				+						
7	Information security of automated systems	9				+						
8	Strategic management	6	+									
9	Business research	6	+									
10	Organization and planning of scientific research (English)	6		+								
11	Uninterruptible power supply systems for automatic devices	9					+					
12	Research practice	5	+	+	+	+	+		+	+	+	+
13	Diagnosis and monitoring of CVD devices	6						+				
14	Microprocessor systems for diagnosing CVD devices	6						+				
15	Computer systems DC	6			+							
16	Automated technical and technical systems	6			+							
17	Microprocessor systems at stations	6							+			
18	Station devices and signaling systems	6							+			
19	Train interval control systems	6							+			
20	Path blocking and auto-adjustment	6							+			
21	Artificial intelligence in transport	9								+		
22	Cloud computing infrastructure	9								+		
23	Master's student's research work, including internship and master's thesis	24	+	+	+	+	+	+	+	+	+	+
24	Preparation and defense of a master's thesis	8	+	+	+	+	+	+	+	+	+	+

6. EDUCATIONAL PROGRAM STRUCTURE

№	Name of cycles of disciplines and activities	total labor intensity	
		in academic hours	in academic hours
1.	Theoretical training	2640	88
1.1	**Cycle of basic disciplines (BD)**	1050	35
1)	University component	600	20
	History and philosophy of science	150	5
	Foreign language (professional)	120	4
	Higher education pedagogy	150	5
	Psychology of management	60	2
	Pedagogical practice	120	4
2)	Component of choice (CV)	450	15
1.2	**Cycle of major disciplines (PD)**	1590	53
1)	University component	600	20
2)	Component of choice	990	33
3)	Research practice	150	5
2.	**Research work of a master's student**	720	24
1)	Master's student's research work, including internship and master's thesis	720	24
3	**Additional types of training (ADE)**	-	-
4	**Final certification (IA)**	240	8
1)	Preparation and defense of a master's thesis (project) (OiZMD (P)	240	8
	Total	**3600**	**120**

Academy of logistics and transport

Form of study: full-time

Duration of study: 2 years

Admission: 2023

CURRICULUM

Direction of training: 7M071 Engineering and Engineering

Group of educational programs: M100 -Automation and control

Name of the educational program:

7M07144 - Automation and control

Degree: Master of Engineering Science

APPROVED
By the decision of the Academic Council of the ALT
«Логистика және көлік академиясы»
Protocol № 13
Chairman of the Academic Council
«Академия логистики и транспорта»
S.N. Amirgaliyeva

№	Discipline code	Name of cycles and disciplines	Total labor intensity		Form of control, semester		The amount of study load, contact hours						Distribution by semester				Securing the chair
								Classroom			CPO		1st course		2nd year		
			in academic hours	in academic credits	Exam	CP (TP)	Total hours	lectures	practical	laboratory	IWTT	IWS	1 sem.	2 sem.	3 sem.	4 sem.	
													15 weeks	15 weeks	15 weeks	15 weeks	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	18	19	20
1		CYCLE OF BASIC DISCIPLINES (DB):															
1.1.		University component:	600	20			600	68	82	0	32	298	9	11	0	0	
1.1.1.	23-0-M-VK-IFN	History and philosophy of science	150	5	1		150	30	15		8	97	5				
1.1.2.	23-0-M-VK-IYa(P)	Foreign language (Professional)	120	4	1		120		45		8	67	4				SHDaPE
1.1.3.	23-0-M-VK-PVSh	Pedagogy of higher education	150	5	1		150	30	15		8	97					LT
1.1.4.	23-0-M-VK-PU	Managerial Psychology	60	2	2		60	8	7		8	37		5			SHDaPE
1.1.5.	23-0-M-VK-PedPr	Pedagogical practice	120	4			120							2			SHDaPE
1.2.		Component of choice:	450	15			450	75	75	0	16	284	9	6	0	0	
1.2.1.	23-44-M-KV-SASZHT	Digital automated systems in railway transport	270	9	1		270	45	45		8	172	9				AC
	23-44-M-KV-IBAS	Information security of automated systems															
1.2.2	23-0-M-KV-SM	Strategic management	180	6	2		180	30	30		8	112		6			TLM
	23-0-M-KV-BI	Business research															
		Total by DB cycle:	1050	35			1050	143	157	0	48	582	18	17	0	0	
2		CYCLE OF PROFILE DISCIPLINES (PD):															
2.1.		University component:	600	20			600	75	75	0	16	284	6	0	14	0	
2.1.1	23-0-M-VK-OPNI	Organization and planning of scientific research (English)	180	6	1		180	30	30		8	112	6				SE
2.1.3.	23-44-M-VK-SBPAU	Uninterruptible power supply systems for automatic devices	270	9	3		270	45	45		8	172			9		AC
2.1.4.	23-0-M-VK-IsPr	Research practice	150	5	3		150								5		AC
2.2.		Component of choice:	990	33	12	0	990	165	165	0	40	620	6	12	15	0	
2.2.1.	23-44-M-KV-DMUZhAT	Diagnostics and monitoring of reaper devices	180	6	3		180	30	30		8	112			6		AC
	23-44-M-KV-MSDU	Microprocessor systems diagnostics of reaper devices															
2.2.2.	23-43/44-M-KV-KSDC	DC computer systems	180	6	2		180	30	30		8	112	6				AC
	23-43/44-M-KV-ASTUTS	Automated Remote Control and Telesignalization system															
2.2.3.	23-43/44-M-KV-MSS	Microprocessor systems at the stations	180	6	2		180	30	30		8	112		6			AC
	23-43/44-M-KV-SUSS	Station devices and SCB systems															
2.2.4.	23-43/44-M-KV-SIRDP	Systems of interval regulation of train traffic	180	6	2		180	30	30		8	112		6			AC
	23-43/44-M-KV-PBiA	Track blocking and auto-regulation															
2.2.5.	23-44-M-KV-IIT	Artificial intelligence in transport	270	9	3		270	45	45		8	172			9		ICT
	23-44-M-KV-IOV	Cloud Computing Infrastructure															
		TOTAL for the PD cycle:	1590	53			1590	240	240	0	56	904	12	12	29	0	
		Total for theoretical training:	2640	88			2640	383	397	0	104	1486	30	29	29	0	
3	23-0-M-VK-NIRM	Research work of a master's student, including internship and completion of a master's thesis	720	24										1	16	7	AC
4	23-0-M-VK-OZMD	Registration and defense of a master's thesis	240	8												8	AC
		TOTAL FOR THE ENTIRE PERIOD OF STUDY	3600	120			2640	383	397	0	104	1486	30	30	45	15	
5	Additional types of training	Additional types of training:															

AGREED:

Vice-Rector for AA _____ Zharmagambetova M.S.

Director of the DAPQ _____ Lipskaya M.A.

DEVELOPED BY:

Director of the Institute "AT" _____ Toigozhinova A.T.

Head of the Department of "AC" _____ Sansyzbay K.M.

8. CATALOG OF DISCIPLINES OF THE UNIVERSITY COMPONENT

SALES PROGRAM **7M07144 – Automation and control l**

Level of education: master's degree **Term of study: 2 years** **Year of admission: 2023**

Cycle	Component	Name of the discipline	Total labor intensity		Term	Educational outcomes	Brief description of the discipline	Prerequisites	Post-requirements
			in academic hours	in academic hours					
1	2	3	4	5	6	7	8	9	10
BD	UK	History and philosophy of science	150	5	1	ON9	Master's students are given knowledge on the history of science and special sciences, which provide the opportunity to understand the dynamics of the development of science; the philosophy of science allows one to reveal the foundations of science as a system of scientific knowledge that shapes public consciousness. The methodology of science allows us to understand the methodological foundations and problems of modern science in order to develop a methodological culture for the scientific research work of future specialists. Active learning methods are used such as interactive and digital technologies, project-based teaching methods, problem-based learning technology and gamification	Disciplines of the undergraduate BD cycle	final examination
BD	UK	Foreign language (professional)	120	4	1	ON2	Mastery of professional English at an advanced level (for non-linguistic areas), grammatical characteristics of the scientific style in its oral and written forms, professional oral communication in monologue and dialogic form according to the educational program, as well as the ability to demonstrate research results in the form of reports, abstracts, publications and public discussions; interpret and present scientific research results in a foreign language. The discipline uses interactive teaching methods, case methods, role-playing games, group work	Disciplines of the undergraduate BD cycle	Organization and planning of scientific research (English)
BD	UK	Higher education pedagogy	150	5	1	ON10	Studying the theoretical and methodological foundations of higher education pedagogy, the modern paradigm of higher education and the system of higher professional education in the Republic of Kazakhstan, didactics and the process of education in higher education, the formation of professional competence and skills necessary for the implementation of full-fledged teaching activities. The discipline uses interactive teaching methods such as role-playing games and group work	Disciplines of the undergraduate BD cycle	Pedagogical practice
BD	UK	Psychology of management	60	2	2	ON1	Aimed at studying the theoretical and methodological foundations of management psychology, the main socio-psychological problems of management and ways to solve them, familiarization with methods for studying important socio-psychological characteristics of the individual and team, professional, interpersonal and intrapersonal problems using management psychology. The discipline uses active learning methods: teamwork, cluster, role-playing games, discussions, brainstorming ("brainstorming"), express survey	Disciplines of the undergraduate BD cycle	final examination
BD	UK	Pedagogical practice	120	4	2	ON10	Formation and development of professional knowledge in the field of the chosen Educational program, consolidation of the acquired theoretical knowledge in the disciplines of the direction and special disciplines of the master's program, mastery of the necessary professional competencies in the chosen field of study	Higher education pedagogy	final examination
PD	UK	Organization and planning of scientific research (English)	180	6	1	ON2	Formation of a system of knowledge among undergraduates about the place and role of science, about the main stages of the development of science in Kazakhstan, about the organizational and methodological foundations of organizing scientific research at the macro, meso and micro levels, knowledge is given about the basic principles of planning, conducting, and recording the results of scientific research. Teaching methods - case-study, group discussions	Foreign language (profession)	Research practice, final examination

1	2	3	4	5	6	7	8	9	10
PD	UK	Uninterruptible power supply systems for automatic devices	270	9	3	ON5	The discipline is aimed at studying the principles of constructing systems for guaranteed power supply of signaling, centralization and blocking devices. Methods for the safe and reliable inclusion of uninterruptible power supplies in railway automation and telemechanics systems are considered.	Undergraduate disciplines	final examination
PD	UK	Research practice	150	5	3	ON1-ON5, ON7-ON10	Formation and development of professional knowledge in the field of the chosen Educational program, consolidation of the acquired theoretical knowledge in the disciplines of the direction and special disciplines of the master's program, mastery of the necessary professional competencies in the chosen field of study	Организация и планирование научных исследований (англ.)	final examination
		Master's student's research work, including internship and master's thesis	720	24	2,3,4	ON1-ON10	The form of a master's student's research work can be specified and supplemented depending on the specifics of the master's program and the topic of the master's thesis. The undergraduate research work includes: - research work; - scientific internship; - scientific publications (participation in scientific conferences and seminars); - writing a master's thesis	Cycle of basic disciplines (BD), Cycle of major disciplines (PD), NIRM	final examination
		Preparation and defense of a master's thesis	240	8	4	ON1-ON10	The purpose of the final certification of a master's student is to evaluate the learning outcomes achieved upon completion of the master's educational program.	Cycle of basic disciplines (BD), Cycle of major disciplines (PD), NIRM НИРМ	final examination
TOTAL:			**2160**	**72**					

9. CATALOG OF ELECTIVE COMPONENT DISCIPLINES

EDUCATIONAL PROGRAM **8D07158 – Automation and control**

Education level: Doctoral studies **Study period: 3 years** **Year of admission: 2023**

Cycle	Component	Name of the discipline	Total labor intensity		Term	Educational outcomes	Brief description of the discipline	Prerequisites	Post-requirements
			in academic hours	in academic credits					
1	2	3	4	5	6	7	8	9	10
BD	EC	Digital automated systems in railway transport	270	9	1	ON4	The discipline is aimed at studying the principles of building digital automated systems used in railway transport. This course forms students' knowledge, skills and abilities in the field of maintenance of digital systems of electrical and dispatching centralization, as well as systems of interval regulation of train traffic.	BD, PD of the bachelor's cycle	Manufacturing practice, Final certification
		Information security of automated systems				ON4	The discipline is aimed at studying the basics of designing an integrated information security system of automated systems, mastering ways to isolate information in automated systems that is subject to protection, as well as studying the criteria for the security of automated systems and the methodology for building modern information security systems.	BD, PD of the bachelor's cycle	Manufacturing practice, Final certification
BD	EC	Strategic management	180	6	2	ON1	Formation of undergraduates' basic theoretical knowledge and basic practical skills in the field of strategic management of enterprises and organizations, strategic analysis of the external and internal environment of the company, the company's competitive strategy and corporate management strategy.	BD of the bachelor's cycle	Final certification
		Business research				ON1	Mastering theory by undergraduates, as well as developing practical skills in business research and analytics, life cycle analysis of the development of promising technologies. The scientific and technical aspects of the project are being studied.	BD of the bachelor's cycle	Final certification
PD	EC	Diagnostics and monitoring of RAT devices	180	6	3	ON6	The purpose of this discipline is to study the principles of building systems for diagnosing and monitoring railway automation and telemechanics devices. The methods of organizing self-diagnosis in systems, issues of improving the reliability of the functioning of equipment of railway automation and telemechanics systems due to the organization of technical diagnostics are considered.	Uninterruptible power supply systems for automatic devices	Final certification
	EC	Microprocessor systems for diagnosing RAT devices				ON6	The discipline is aimed at studying the principles of constructing microprocessor systems for diagnosing railway automation and telemechanics devices. The role functions of nodes and circuit diagrams of microprocessors directly related to the diagnosis of devices and systems of railway automation are investigated. The methods of monitoring the parameters of SCB devices in various microprocessor diagnostic systems are considered.	Uninterruptible power supply systems for automatic devices	Final certification
PD	EC	DC computer systems	180	6	2	ON8	The discipline is aimed at studying the principles of building a new generation of operational dispatch control systems. The issues of the organization of automated workplaces of train dispatchers, the study of the element base of computer systems of dispatching centralization, as well as methods of organization of management and control of remote control facilities are considered.	Operational reliability of automation and telemechanics devices/Reliability of automation systems in transport	Manufacturing practice, Final certification

1	2	3	4	5	6	7	8	9	10
		Automated Remote Control and Telesignalization systems				ON8	The discipline is aimed at studying the principles of building automated dispatch centralization systems. The methods of organizing the transmission of remote control and telesignalization signals, methods of transmitting responsible commands for remote control and control of railway automation and telemechanics facilities are considered.	Operational reliability of automation and telemechanics devices/Reliability of automation systems in transport	Manufacturing practice, Final certification
PD	EC	Microprocessor systems at the stations	180	6	1	ON5, ON8	The discipline focuses on the study of the principles of construction of relay-processor and microprocessor systems of automation and telemechanics used at stations. The course forms the skills of designing various relay-processor and microprocessor systems at stations, as well as reading electrical circuit diagrams for controlling arrows and signals when using these systems.	Bachelor's degree disciplines	Manufacturing practice, Final certification
		Station devices and SCB systems				ON8 ON5	The requirements for various electrical centralization systems at stations, their element base and the sequence of actions to ensure the capacity of the station, sorting slides in accordance with the rules of technical operation are investigated. The discipline uses interactive teaching methods, case methods, role-playing games, group work.	Bachelor's degree disciplines	Manufacturing practice, Final certification
PD	EC	Systems of interval regulation of train traffic	180	6	2	ON7	The discipline is aimed at studying the principles of constructing systems of interval regulation of train traffic. Develops skills in designing devices and auto-locking systems. The basic schemes of changing the direction of movement of trains on stages, as well as methods of dispatching control of distillation devices and systems are investigated.	Theory and operational reliability of automation and telemechanics devices /Reliability of automation systems in transport Bachelor's degree disciplines	Manufacturing practice, Final certification
		Track blocking and auto-regulation				ON7	The discipline is aimed at studying the principles of building systems of semi-auto-locking, auto-locking and radio-blocking. The course forms the skills of designing systems for interval control of the movement of new generation trains, track plans of crossings and reading electrical circuit diagrams of auto-locking.	Operational reliability of automation and telemechanics devices/Reliability of automation systems in transport Bachelor's degree disciplines	Manufacturing practice, Final certification
PD	EC	Artificial intelligence in transport	180	9	3	ON8	The purpose of this discipline is to master the principles of organization and functioning of intelligent systems, as well as to gain practical skills in their design. The ways of using tools and technologies for designing artificial intelligence systems for railway automation and telemechanics are considered.	Digital automated systems in railway transport Information security of automated systems	Manufacturing practice, Final certification
		Cloud Computing Infrastructure				ON8	The discipline is aimed at studying the architecture of "cloud" technologies, designing "cloud" services, as well as gaining skills in application development for the main existing "cloud" platforms. The main characteristics of "cloud" technologies, methods of assessing the benefits and risks associated with the use of "cloud" computing are considered.	Digital automated systems in railway transport Information security of automated systems	Manufacturing practice, Final certification
TOTAL			**1440**	**48**					

ЭКСПЕРТНОЕ ЗАКЛЮЧЕНИЕ
НА ОБРАЗОВАТЕЛЬНУЮ ПРОГРАММУ
7М07144 – «АВТОМАТИЗАЦИЯ И УПРАВЛЕНИЕ»

Реализация образовательной программы 7М07144 – «Автоматизация и управление» ОП «АУ» осуществляется посредством последовательности изучаемых дисциплин, с установлением конкретных задач и целевых индикаторов. В ОП прослеживается междисциплинарное взаимодействие, которое заключается в комплексной связи между содержанием отдельных учебных дисциплин, с целью достижения внутреннего единство программы подготовки магистров.

Учебный план ОП определяет перечень всех учебных дисциплин обязательного компонента и компонента по выбору, а также трудоемкость каждой учебной дисциплины в кредитах и последовательность их изучения, виды учебных занятий и формы контроля. Актуально изучение вопросов цифровых автоматизированных систем на железнодорожном транспорте.

Образовательные траектории разработаны в соответствии с запросами транспортной отрасли в области железнодорожной автоматики и телемеханики.

Необходимо отметить, что в разработанной ОП «АУ» введены новые дисцилины как Цифровые автоматизированные системы на железнодорожном транспорте, Информационная безопасность автоматизированных систем, Организация и планирование научных исследований (англ.), Искусственный интеллект на транспорте, Инфраструктура облачных вычислений.

Цель ОП «АУ» является актуальной, сформулирована достаточно лаконично и объединяет результаты обучения. В описании дисциплин отражены их цели и содержание, как индикатора достижения результатов обучения по данной образовательной программе.

Таким образом, представленная на экспертизу образовательная программа 7М07144 – «Автоматизация и управление» полностью соответствует требованиям ГОСО, выдержана четкая последовательность при разработке ОП, которая отвечает современным запросам рынка труда, профессиональным требованиям и может быть реализована в процессе подготовки кадров для железнодорожного транспорта.

Менеджер функционального направления
по развитию и внедрению железнодорожной
автоматики филиала АО «НК «ҚТЖ» -
«Дирекция автоматизации и цифровизации» **Оразбаев К.Ж.**

ЭКСПЕРТНОЕ ЗАКЛЮЧЕНИЕ
на образовательную программу 7М07144- Автоматизация и управление

Реализация образовательная программа 7М07144 – «Автоматизация и управление» (*далее* – ОП «АУ») реализуется посредством последовательности изучаемых дисциплин, с установлением конкретных задач и целевых индикаторов. Четко прослеживается междисциплинарное взаимодействие, которое заключается в комплексной связи между содержанием отдельных учебных дисциплин, посредством которых достигается внутреннее единство программы подготовки специалистов.

В учебном плане ОП «АУ» определен перечень всех учебных дисциплин обязательного компонента и компонента по выбору, трудоемкость каждой учебной дисциплины в кредитах, последовательность их изучения, виды учебных занятий и формы контроля. Актуально изучение вопросов информационной безопасности автоматизированных систем.

Образовательные траектории разработаны в соответствии с запросами транспортной отрасли в области железнодорожной автоматики и телемеханики.

Очень актуально изуение дисциплин Цифровые автоматизированные системы на железнодорожном транспорте, Информационная безопасность автоматизированных систем, Организация и планирование научных исследований (англ.), Искусственный интеллект на транспорте, Инфраструктура облачных вычислений.

Цель ОП «АУ» является актуальной, сформулирована достаточно лаконично и объединяет результаты обучения. В описании дисциплин отражены их цели и содержание, как индикатора достижения результатов обучения по данной образовательной программе.

Таким образом, представленная на экспертизу образовательная программа 7М07144 – «Автоматизация и управление» полностью соответствует требованиям ГОСО, выдержана четкая последовательность при разработке ОП, которая отвечает современным запросам рынка труда, профессиональным требованиям и может быть реализована в процессе подготовки кадров для железнодорожного транспорта.

Эксперт:
PhD, ассоциированный профессор
кафедры «Программной инженерии»,
Satbayev University **Мукажанов Н.К.**

РЕЦЕНЗИЯ
на образовательную программу по направлению подготовки
7М07144-«Автоматизация и управление»

Образовательная программа магистратуры **7М07144-«Автоматизация и управление»** содержит следующую необходимую информацию: квалификация выпускника, форма и срок обучения, направление и характеристика деятельности выпускников, приведен полный перечень компетенций, которыми должен обладать выпускник в результате освоения данной образовательной программы.

Дисциплины учебного плана по рецензируемой образовательной программе формируют весь необходимый перечень общекультурных и профессиональных компетенций, предусмотренных ГОСО по соответствующим видам деятельности.

В учебном плане образовательной программы определен перечень всех учебных дисциплин обязательного компонента и компонента по выбору, трудоемкость каждой учебной дисциплины в кредитах, последовательность их изучения, виды учебных занятий и формы контроля. Каталог элективных дисциплин, каталог внутривузовского компонента полностью отражают техническую преемственность дисциплин (например, для изучения дисциплины «Диагностирование и мониторинг устройств ЖАТ» изучается дисциплина «Микропроцессорные системы на станциях» и.т.д.).

Соблюдена последовательность изучения дисциплин, включены дисциплины, необходимые для последующего использование навыков преподавания.

Содержание рабочих программ учебных дисциплин и практик позволяет сделать вывод, что оно соответствует компетентностной модели выпускника.

Образовательная программа предусматривает профессионально-практическую подготовку обучающихся в виде практики. Содержание программ практик свидетельствует об их способности сформировать необходимые практические навыки обучающихся.

Для разработки образовательной программы были привлечены опытный профессорско-преподавательский состав, ведущие представители работодателя, обучающиеся, учтены их требования при формировании дисциплин профессионального цикла.

Заключение:

В целом, рецензируемая образовательная программа **7М07144-«Автоматизация и управление»** отвечает основным требованиям ГОСО, национальной и отраслевой рамкам квалификаций, профессиональных стандартов и способствует формированию общекультурных и профессиональных компетенций по направлению подготовки **7М071 – «Инженерия и инженерное дело»**.

Рецензент
Заместитель главного технолога
ТОО «Корпорация Сайман» **Нурмагамбетов М.А.**

Корпорация Сайман

Уважаемый (ая) Қанибек Мұратбекұлы!

Руководство «Алматинской дистанции сигнализации и связи филиала АО «НК «ҚТЖ» - «Алматинское отделение магистральной сети»» в лице начальника ШЧ-33 Куаншпаева Маната Нартаевича ознакомилось с содержанием образовательной программы 7М07144-«Автоматизация и управление» и внесло следующие рекомендации:

- включить в содержание образовательной программы дисциплины: с IT технологиями;
- увеличить количество часов, выделяемых на проведение части лабораторных и практических занятий на базах работодателей с целью формирования определенных видов профессиональных компетенций;
- актуализировать содержание образовательных программ путем включения в цикл базовых и профилирующих модулей дисциплины, отражающие современные инновационные технологии в транспортной сфере в областии автоматики и телемеханики. Предлагается включить следующие дисциплины «Цифровые автоматизированные системы на железнодорожном транспорте», «Искусственный интеллект на транспорте».

Работодатель _____ дата, печать

КАДРЛАР БӨЛІМІ
ОТДЕЛ КАДРОВ

Академия логистики и транспорта

Выписка из ПРОТОКОЛА № 6
заседания кафедры «**Автоматизация и управление**»

г. Алматы

24 февраля 2023 г.

Председатель: Сансызбай Қ.М.
Секретарь: Сағитжанова М.Ж.

Присутствовали: директор института «Автоматизация и телекоммуникации», ассоц. профессор АЛиТ Тойгожинова А.Ж; заведующий кафедрой «Автоматизация и управление», ассоц. профессор АЛиТ Сансызбай Қ.М.; **академический – ассоциированный профессор:** Ведерников Б.М., **ассоциированный профессор:** Сулейменова Г.А.; **ассоциированный профессор АЛиТ:** Шульц В.А.; **ассистент-профессор**: Даутов Е.К.; **сеньор-лекторы**: Шукаманов Ж.Е., Касымова А.Е., Спабекова М.Ж., Садвакасова Ж.Д.; **ассистент-преподаватели:** Сагмединов Д.Б., Тасболатова Л.Т., Сагитжанова М.Ж., Тулемисов Т.Т.

Представители с производства: Куттугулов К.И. – заместитель начальника Центральной лаборатории автоматики, телемеханики и связи акционерного общества «Национальная компания «Қазақстан темір жолы» по Алматинскому региону; Куаншбаев М.Н. – начальник Алматинской дистанции сигнализации и связи филиала Акционерного общества «Национальная компания «Қазақстан темір жолы» - «Алматинское отделение магистральной сети»; Сулейманов Д. – управляющий директор филиала АО «Транстелеком» в г. Алматы – «Алматытранстелеком».

Обучающиеся: магистрант группы МН-АУ-22-1 Воронцова Р.А., студенты группы АУ-19-1-2-3-4: Сейілбекұлы Т., Қазыбеков Д., Серік С., Балтабай Ә., Мендешканова Д.

ПОВЕСТКА ДНЯ:

4. Обновление компетентностной модели выпускника по действующим образовательным программам кафедры.
5. Рассмотрение возможности включения дисциплины в РУП и КВК/КЭД для ОП приёма 2023 года.

По четвертому вопросу СЛУШАЛИ: Зав. кафедрой «АиУ» Сансызбай Қ.М. с предложением рассмотреть компетентностную модель выпускника по 3 уровням образования: бакалавриат, магистратура, докторантура, по действующим ОП кафедры «АиУ»:

Бакалавриат: ОП 6В07120-Автоматизация и управление.

Магистратура: ОП 7М07143-Управление технологическими комплексами (профильная 1,5 года), 7М07144-Автоматизация и управление (научно-педагогическая, 2 года).

Докторантура: ОП 8D07158-Автоматизация и управление.

Компетентностная модель выпускника включает в себя следующие части:
- Цели и задачи образовательной программы;
- Результаты обучения;
- Область, объекты, функции профессиональной деятельности;
- Перечень должностей по образовательной программе;
- Профессиональные сертификаты, полученные по окончании обучения;
- Требования к предшествующему уровню образования.

ВЫСТУПИЛ: Представитель работодателей по ОП 6В07120-Автоматизация и управление, 7М07143-Управление технологическими комплексами, 7М07144-

Автоматизация и управление, ОП 8D07158-Автоматизация и управление, начальник Алматинской дистанции сигнализации и связи филиала Акционерного общества «Национальная компания «Қазақстан темір жолы» - «Алматинское отделение магистральной сети» - Куаншбаев М.Н., который охарактеризовал Компетентностную модель выпускника как положительную.

ВЫСТУПИЛ: Представитель работодателей по ОП 6В07120-Автоматизация и управление, 7М07143-Управление технологическими комплексами, 7М07144-Автоматизация и управление, ОП 8D07158-Автоматизация и управление, заместитель начальника Центральной лаборатории автоматики, телемеханики и связи акционерного общества «Национальная компания «Қазақстан темір жолы» по Алматинскому региону - Куттугулов К.И., который отметил актуальность и востребованность на рынке труда действующих модели выпускников.

ПОСТАНОВИЛИ:

1. Информацию принять к сведению;
2. При формировании компетентностного моделя выпускника учесть актуальность и востребованность рынка труда.
3. После рассмотрения на кафедре компетентностных моделей выпускников по 3 уровням было предложено дать для рассмотрения и утверждения КОК УМБ института «Автоматизация и телекоммуникации»

По пятому СЛУШАЛИ: Зав. кафедрой «АиУ» Сансызбай Қ.М. с информацией предложением заслушать представителен работодателей и ППС кафедры по включению новых дисциплин в КЭД и РУП приема 2023 г.

Было отмечено что в текущем ученом году в связи с изменениями в НПА МНВО РК есть необходимость актуализации действующих образовательных программ бакалавриата и магистратуры. Кроме того рассматривается перспектива участия АЛиТ в различных: рейтингах в том числе и QS by Subject, в связи с этим также требуется пересмотр действующих ОП. Предлагается пересмотреть названия дисциплин в соответствии. с программами потенциальных международных партнеров, что дает ряд преимуществ в трансферте кредитов и в участии Академии в международных рейтингах; уменьшить количество дисциплин в ОП, тем самым схожие дисциплины укрупнить, что поможет преподавателям сконцентрироваться на одной полной программе дисциплины, нежели разбивать ее на 2-3 логически схожие дисциплины. Рекомендуется выделять на одну дисциплину от 6 до 9 кредитов, что также качественно повлияет на выбор дисциплин студентами компонента по выбору и глубокое погружение в каждый предмет.

ВЫСТУПИЛИ: Сулейменова Г.А., Шукаманов Ж.Е., Садвакасова Ж.Д. разработчики образовательных программ всех 3 уровней, в связи с актуализацией предлагает уменьшить количество дисциплин в ОП, схожие дисциплины укрупнить, это поможет преподавателям сконцентрироваться на одной полной программе дисциплины, нежели разбивать ее на 2-3 логически схожие дисциплины.

В ходе обсуждения, были актуализированы рабочие учебные планы по Всем 3 уровням.

ПОСТАНОВИЛИ:

1.Информацию принять к сведению;

Председатель **Сансызбай Қ.М.**

Секретарь **Сағитжанова М.Ж.**

Академия логистики и транспорта

ПРОТОКОЛ № 4а
заседания Комиссии по обеспечению качества – Учебно-методического бюро (КОК-УМБ) института «Автоматизация и телекоммуникации»

г. Алматы 28 март 2023 года

Председатель: Тойгожинова А.Ж.
Секретарь: Абиева М.С.
Присутствовали: ассоциированный профессор АЛиТ, директор института Тойгожинова А.Ж – председатель КОК-УМБИ; лектор кафедры «РТ» Абиева М.С. – секретарь; сениор-лектор кафедры «ИКТ», зам.директора по учебно-методической работе ИАТ Нурланбек А.Д.; сениор-лектор кафедры «ИКТ», зам.директора по воспитателльной работе Ақтайлақова Д.А.; зав. кафедрой «АУ» - PhD, ассоциированный профессор АЛиТ Сансызбай К.М.; Заведующий кафедрой «ИКТ» - PhD, ассистент-профессор Касымова Д.Т.; Заведующий кафедрой «Энергетика» - PhD, ассистент-профессор Егзекова А.Т.; ассоциированный профессор кафедры «АУ» Шульц В.А.; сениор-лектор кафедры «ИКТ» Кусамбаева Н.Ш.; сениор-лектор кафедры «Э» Карасаева Ә.Р.;
Отсутствовали: Оразымбетова А.К , Спабекова М.Ж., Калиев Ж.Ж
Представители с производства: начальник отдела инфраструктуры РЦУП-2 филиала АО «НК «КТЖ» - «Алматинское отделение магистральной сети» Сарсенбеков Б.С.; начальник ТУМС филиала АО «Алматытранстелеком» Мырзабаев А.А.; начальник Алматинской дистанции сигнализации и связи ШЧ-33 филиала АО «НК «КТЖ» Куаншбаев М.Н.
Обучающиеся: студенческий декан ИАТ Мендешканова Дарина; магистрант группы МН-ЭЭ-21-1к Сеитбек Е.Е.

ПОВЕСТКА ДНЯ:

1. Рассмотрение каталога элективных дисциплин (КЭД), Рабочей учебной программы (РУП), паспорта образовательных программ бакалавриата, магистратуры и докторантуры.

ВЫСТУПИЛИ: зав.кафедрой «АУ» - PhD, ассоциированный профессор АЛиТ Сансызбай К.М.; Заведующий кафедрой «ИКТ» - PhD, ассистент-профессор Касымова Д.Т.; Заведующий кафедрой «Энергетика» - PhD, ассистент-профессор Егзекова А.Т. Они представили на рассмотрение КЭД, РУП бакалавриата, магистратуры и докторантуры.

На кафедрах «ИКТ», «ЭЭ» и «АУ» было проведено заседание с привлечением представителей работодателей и обучающихся по обсуждению структуры и содержанию следующих образовательных программ.

По кафедре «АУ»:
- 6В07120 – Автоматизация и управление (бакалавриат);
- 7М07143 – Управление технологическими комплексами (магистратура, профильное направление);
- 7М07144 – Автоматизация и управление (магистратура, научно-педагогическое направление);
- 8D07158 – Автоматизация и управление (докторантура).

По кафедре «ИКТ»:
- 6В06209 - Радиотехника, электроника и телекоммуникации;
- 6В06208 - Телекоммуникационные системы и сети железнодорожной связи;
- 6В06116 - Информационные системы;
- 6В06118 - Программная инженерия;
- 7М06234 - Радиотехника, электроника и телекоммуникации (научно-педагогическая);
- 7М06233 - Радиотехника, электроника и телекоммуникации (профильная);

- 8D06255 - Радиотехника, электроника и телекоммуникации.

По кафедре «ЭЭ»:

- 6B07121 - Электроэнергетика
- 6B07188 IT - Энергетика
- 7M07149 - Электроэнергетика
- 7M07150 - Электроэнергетика
- 8D07160 - Электроэнергетика

Представителями работодателей и обучающимися были предложены ряд новых актуальных дисциплин, которые кафедры одобрили и включили и новые КЭД и РУП.

ПОСТАНОВИЛИ:

1. Информацию принять к сведению;
2. Учесть все предложения и рекомендации работодателей, представителей студенческого актива;
3. Представить КЭД, РУП и ОП бакалавриата, магистратуры и докторантуры для рассмотрения и утверждения на Совете института, УС Академии.

Председатель КОК-УМБ ИАТ **Тойгожинова А.Ж.**

Секретарь **Абиева М.С.**

14. APPROVAL SHEET

Educational programs
Name: 7M07144 – Automation and control
Level of training: master's degree in scientific and pedagogical

№	Full Name	Position	Signature	Date
1.	Трінохина А.Ж.	доцент - преп.		03.04.23г
2.	Асылова Д.Т.	зав. каф. ИВТ		03.04.23г.
3.	Сыдыкова Ф.М.	зав. каф. , ЭП		03.04.2023.
4.	Нурсалиева Л.Д.	зав. каф ОиЛСТ		03.04.2023
5	Тунгатарова А.С	зав. каф СиРиРВ		03.04.2023
6	Сулкова А.Р.	зав. каф. ЭТ		03.04.23
7	Асылгужина С.О	зав. каф. СИ		03.04.23.

15. CHANGES REGISTRATION SHEET

№	Section, paragraph of the document	Section, paragraph of the document)	Number and date of notification	The change has been made	
				Date	Surname and initials, signature, position