JSC "ALT University named after. Mukhametzhan Tynyshpayev"

APPROVED
by the decision of the AC ALT from
«____» _____ 2024y. (Protocol №__)
President-Rector
_____ Amirgalieva S.N.

EDUCATIONAL PROGRAM

Name: 6B07174- Intelligent technologies for transport processes

Level of training: bachelor course

Code and classification of training areas: 6B071 - Engineering and engineering

Code and group of educational programs: B065 Transport engineering and technology

Date of registration in the Registry: 31.05.2024

Date of registration in the Registry: 6B07100099

Almaty, 2024 y

CONTENTS

1. INFORMATION ABOUT THE REVIEW, APPROVAL AND APPROVAL OF THE PROGRAM, DEVELOPERS, EXPERTS AND REVIEWERS

1 DEVELOPED BY:

JSC «Mukhamedzhan Tynyshpaev ALT University», Associate Professor of the Department «OTOT», Candidate of Technical Sciences — *Bitileuova Z.*

JSC «Mukhamedzhan Tynyshpaev ALT University», Associate Professor of the Department «OTOT», Candidate of Technical Sciences — *Vakhitova L.*

JSC «Mukhamedzhan Tynyshpaev ALT University», Assistant Professor Assistant Professor «OTOT», Candidate of Technical Sciences — *Abibullaev S.*

JSC «Mukhamedzhan Tynyshpaev ALT University», Assistant Professor Assistant Professor «OTOT», PhD — *Bekmagambetova L.*

Transportation expert-specialist of the Department of Dispatching Transportation Management of Transcom LLP — *Aikumbekov M.*

Student of the educational program 6B11326-OTOT — *Kosherbayeva S.*

2 EXPERTS:

Director of Commercialization SIC LLP «Development of the transportation process» — *Sman A.*

Head of the Department of Dispatching Transportation Management of Transcom LLP — *Kosybaev K.K.*

3 REVIEWER:

Director of the Transportation Organization Department of Transcom LLP — *Zhumataev A.Zh.*

4 REVIEWED AND RECOMMENDED:

Meeting of the AC of the Department «Organization of transportation and operation of transport»
Protocol No. 6, «14» February 2024 — *Bitileuova Z.*

Meeting of the QAC-EMB of the Institute «Logistics and Management»
Protocol No. 7, «26» February 2024 — *Musaeva G.*

Meeting of the EMC
Protocol No. 4a, «24» April 2024 — *Zharmagambetova M.S..*

5 APPROVED *by the decision of the Academic Council of April 25 2024 No. 8*

6 INTRODUCED

2. REGULATORY REFERENCES

The educational program is developed on the basis of the following normative 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. 3.

4. State Mandatory Standard of Higher and Postgraduate Education (Order No. 66 of the Minister of Science and Higher Education of the Republic of Kazakhstan dated February 20, 2023).

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. Rules for the organization of the educational process on credit technology of education in organizations of higher and (or) postgraduate education, approved by the 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).

7. 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).

8. 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).

9. WI-ALT-33 «Regulations on the procedure for developing the educational program of higher and postgraduate education».

10. Professional standard: "Railway transportation of goods: freight and commercial work (station level)", NPP RK "Atameken", approved by the order № 256 from 20.12.2019.

11. Professional standard: "Activity of bus stations and bus terminals", NPP RK "Atameken", approved by order №256 of 20.12.2019.

12. Professional standard: "Organisation of station work", NPP RK "Atameken", approved by order №256 of 20.12.2019.

13. Professional standard: «Dispatch regulation on railway transport (line level)», NPP RK "Atameken", approved by order №256 of 20.12.2019.

14. Professional standard: "Cargo transportation by road transport", NPP RK "Atameken", approved by the order №256 of 20.12.2019.

15. Professional standard: "Logistics of passenger transportation", NPP RK "Atameken", approved by the order №256 of 20.12.2019.

16. Professional standard: "Organisation of professional training of personnel involved in road freight transportation", NPP RK "Atameken", approved by the order №136 from 01.09.2023.

17. Professional standard: "Organisation of professional training of personnel involved in road passenger transportation", NPP RK "Atameken", approved by the order №136 from 01.09.2023.

18. Professional standard: "Ensuring the safety of buses", NPP RK "Atameken", approved by the order №136 from 01.09.2023.

19. Professional standard: "Periodic technical inspection of motor vehicles", NPP RK "Atameken", approved by the order №136 from 01.09.2023.

3 PASSPORT OF THE EDUCATIONAL PROGRAM

№	Название поля	Примечание
1	**Field name**	6B07100099
2	Registration number	6B071 - Engineering and engineering trades
3	Code and classification of the field of education	6B071 - Engineering and engineering trades
4	Code and classification of training areas	B065 Transport equipment and technology
5	Code and group of educational programs	6B07174 Intelligent technologies of transport processes
6	Name of the educational program	Innovative
7	Type of educational program	The purpose of the educational program is to train highly qualified specialists with professional skills and engineering thinking, who are able to effectively plan and organize operational activities in transport using modern intelligent technologies while ensuring transport and environmental safety in a modern transport and communication complex..
8	Purpose of the educational program	6
9	ISCED level	6
10	Level according to the NQF	6
11	Level according to the IQF	No
	Distinctive features of the EP	-
	Partner University (JEP)	-
12	Partner University (Two-degree EP)	full-time
13	Form of training	Kazakh, Russian
14	language of education	241
15	Volume of credits	Bachelor of Engineering and Technology in the educational program “Intelligent Technologies of Transport Processes”
16	Academic degree awarded	KZ12LAA00025205 от 04.03.2021
17	Availability of an appendix to the license for the direction of training	No
	Availability of EP accreditation	-
	Name of the accreditation body	-
	Validity period of accreditation	

4 THE GRADUATE'S COMPETENCE MODEL

Objectives of the educational program:

1. Formation of an individual capable of self-improvement and professional growth with versatile humanitarian and natural science knowledge and interests.

2. Formation of the ability to critically rethink the accumulated experience, to change, if necessary, the profile of one's professional activity, to realise the social significance of one's future profession, to be highly motivated to perform professional activity.

3. Formation of the ability to find a compromise between different requirements (cost, quality, safety and deadlines) in long-term and short-term planning and to make optimal decisions in the field of organisation, management of operational work of the industry.

4. Formation of the ability to generalise, analyse, perceive information, set a goal and choose ways to achieve it.

5. Contributing to the formation of the graduate's readiness: development of measures to improve logistics management systems in transport, and the selection and effective use of transport machinery, equipment and other means for the implementation of production processes..

6. Formation of graduates' readiness for technical and economic analysis, complex justification of accepted and implemented decisions in the field of transport organisation and operation, application of results in practice, aspiration to self-development, improvement of their qualifications and skills.

7. Promotion of graduates' readiness for economical and safe use of natural resources, and implementation of marketing and management methods in the organisation of the transportation process.

Learning outcomes:

LO1 – To analyze the main stages and patterns of cultural and historical development of society, the foundations of philosophy, political processes, interpersonal and legal interests of the parties, a healthy lifestyle to form the positions of a future specialist..

LO2 – Formulate competent oral and written speech, prepare professional and business documentation when developing projects for the modernization and reconstruction of transport facilities, including passenger complexes, as well as when organizing the transportation of goods and passengers in the state and foreign languages..

LO3 – Use computer and engineering modeling, the basics of artificial intelligence, information and communication technologies to solve engineering problems in professional activities..

LO4 - Apply methods of natural and applied sciences, mathematical analysis, scientific research in transport processes for optimal operation of transport..

LO5 - Introduce modern methods and solve problems to ensure life safety, security and environmental protection in the operation of transport..

LO6 – Determine effective methods for eliminating problems in the operation and maintenance of transport, including rolling stock, design transport and urban infrastructure using innovative technologies, including Smart City technologies, explore methods, methods and means of operating intelligent vehicles..

LO7 – Evaluate the efficiency of transport operation based on economic patterns, analyze the technical and economic indicators of its operation and make rational financial decisions using creative thinking with effective time management..

LO8 – Make decisions to increase the throughput, transportation and processing capabilities of transport facilities and enterprises, develop technological processes for their work using innovative technologies, coordinating and modeling traffic movements based on an analysis of their operational and innovative activities..

LO9 – Research, plan, control the operation of traffic flows; optimize the promotion of car flows and passenger flows on the transport network by applying classical methods and new intelligent technologies for managing transport processes..

LO10 – Manage and organize cargo and commercial operations using modern automated management systems for cargo and commercial activities in transport, apply the rules and regulations necessary for the transportation of various goods by rail..

LO11 – Establish a procedure and operate transport while ensuring safety, including in various emergency and emergency situations using modern traffic control systems, studying the principles of construction, methods of analysis of traffic control systems..

LO12 – Organize the operation of passenger terminals and manage innovative infrastructure facilities of passenger complexes using intelligent technologies, including Smart City technologies.

Field of professional activity: organization and management of operational activities of passenger and freight transportation using automated and intelligent transport systems; auxiliary and additional transport activities.

Objects of professional activity:
- automated information processing systems in transport;
- telematics and intelligent transport systems;
- processes of organization and management of operational activities of passenger and freight transport;
- accounting, reporting and technical documentation;
- primary labor collectives.

Types of professional activity:
- application of automated and intelligent transport systems;
- organization of the transportation process (by type of transport);
- organization of service in transport (by type of transport);
- organization of transport and logistics activities (by type of transport).

Functions of professional activity:
- organization, management and logistics;
- service and operation;
- technological activities;
- design.

List of specialist positions:
- Dispatcher, operator of intelligent transport systems;
- Freight forwarder, operator of an intelligent transport expedition;
- Deputy Station Chief for Freight and Commercial Work;
- Lead Engineer (for cargo and commercial work);
- Station manager for cargo work;
- Manager of the bus station and bus station;
- Head of the Traffic Safety Department;
- Head of the Passenger Transportation Service;
- Specialist in the development of passenger transport infrastructure;
- Freight Transportation Engineer;
- The manager responsible for ensuring traffic safety;
- Head of the Training Center for Personnel involved in Road transport;
- Station attendant;
- Train/hub/locomotive dispatcher;
- Head of the Operational and Administrative Department;
- Deputy Head of the Operational and Administrative Department;
- Head of the station of the extracurricular station (grade 1-2);
- Deputy Station Chief (for Operational work);
- Chief engineer of the extracurricular station (grade 1-2);
- The stationmaster is grade 3.

Professional certificates obtained at the end of training not provided for

Requirements for the previous level of education: general secondary, vocational, post-secondary, higher education (bachelor's degree).

In the course of training, students undergo various types of professional practice:

- educational;
- production;
- production (pre - graduation)

Educational practice. Organisation of educational practice is directed on reception of primary professional skills and skills, acquaintance with the basic objects of transport, areas of professional activity and profiles of training and consolidation of passed theoretical material. Within the framework of training practice are held field technical classes on the basis of the branch of the department at the production (Almaty branch of the railway, stations Almaty-1, Almaty-2, transport enterprises), as well as a visit to the museum of transport. Evaluation is carried out by defence of the report on practice.

Production practice (1).

The main objectives of the industrial practice are: consolidation of theoretical knowledge and practical skills on the chosen educational program in a production environment, gaining experience in organizational work, obtaining a working specialty, the formation of practical skills and competencies in the process of mastering the bachelor's program.

Pre-graduate/Production practice (2).

The purpose of the practice for bachelors is to ensure the relationship between the theoretical knowledge gained in the assimilation of the chosen educational program and practical activities. The objectives of this practice are to consolidate and deepen the theoretical knowledge gained by students in the learning process, collect information for writing a final qualifying work, study best practices at the enterprise, as well as gain experience in independent research work, mastering a variety of methods of scientific work. It is carried out in the bases of practices at enterprises according to this educational program.

Final certification. It is aimed at determining the level of professional training of the graduate on the educational programme. Final certification is realised in the form of final certification comprehensive examination or performance and defence of the final qualification research work on a topical or problematic topic (individual or group). On the basis of this assessment, a conclusion is made about the effectiveness of educational activities and the quality of specialist training.

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

№	Name of the discipline	Number of credits	Matrix of correlation of learning outcomes according to the educational program with academic disciplines											
			LO1	LO2	LO3	LO4	LO5	LO6	LO7	LO8	LO9	LO10	LO11	LO12
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	History of Kazakhstan	5	+											
2	Philosophy	5	+											
3	Physical Culture	8	+											
4	Foreign language	10		+										
5	Kazakh (Russian) language	10		+										
6	Information and communication technologies	5			+									
7	Sociology	2	+											
8	Cultural studies	2	+											
9	Political Science	2	+											
10	Psychology	2	+											
11	Ecology and life safety	5					+							
12	Scientific research methods					+								
13	Economics and business activities								+					
14	Basics of law and anti-corruption culture		+											
15	Engineering Mathematics 1	6				+								
16	Engineering Mathematics 2	6				+								
17	Applied Physics 1	4				+								
18	Applied Physics 2	5				+								
19	Theoretical mechanics	6				+								
20	Labor protection	6					+							
21	Automation, telemechanics and communication in transport	6											+	
22	Transportation management on transport	9								+				
23	Modern technologies for cargo and commercial work management	6										+		
24	Computer and engineering modeling	6			+									
25	The basics of artificial intelligence	3			+									
26	Training practice	2	+	+	+	+	+	+	+	+	+	+	+	+
27	Modern railway rolling stock	6						+						
28	Intelligent motor vehicles							+						
29	Innovative technologies for the operation of railway sections and directions	6								+				
30	Modeling and coordination of traffic on highways									+				
31	Rules of cargo transportation by rail	6		+							+			
32	Rules for the transportation of goods by road transport										+			
33	Intelligent technologies in the organization of carriage and passenger traffic	6									+			
34	Intelligent technologies in traffic flow planning										+			
35	Innovative technologies for the operation of railway stations and junctions	6								+				
36	Innovative activities of motor transport enterprises									+				

37	Train traffic control systems	6											+	
38	Traffic safety in road transport												+	
39	Managerial Economics	3							+					
40	Time -management								+					
41	Fundamentals of financial literacy	3							+					
42	Critical thinking								+					
43	Artificial intelligence technologies in transport systems	6									+			
44	Intelligent technologies for the operation of a transport hub	6									+			
45	Management of operational work in transport	6								+				
46	Innovative infrastructure of the passenger complex	6		+										+
47	Technology of operation of passenger terminals	6												+
48	Intelligent traffic safety systems	6											+	
49	Производственная практика 1	3	+	+	+	+	+	+	+	+	+	+	+	+
50	Производственная практика 2	4	+	+	+	+	+	+	+	+	+	+	+	+
51	Minor program 1	3			+				+					
52	Minor program 2	3			+				+					
53	Minor program 3	3			+				+					
54	Railway design and operation	6						+						
55	Design and operation of highways							+						
56	Technical stations and railway junctions	9						+						
57	Designing transport facilities using Smart City technology							+						
58	Separate railway stations	6						+						
59	Intelligent technologies in the automotive and urban infrastructure							+						
60	FINAL CERTIFICATION	8	+	+	+	+	+	+	+	+	+	+	+	+

6. STRUCTURE OF THE BACHELOR'S DEGREE PROGRAM

№ п/п	The name of the cycles of disciplines	Total labor intensity	
		in academic hours	in academic credits
1	Cycle of general education disciplines (GED)	**1680**	**56**
1)	**Required component**	**1530**	**51**
	History of Kazakhstan	150	5
	Philosophy	150	5
	Foreign language	300	10
	Kazakh (Russian) language	300	10
	Information and communication technologies	150	5
	Module of socio-political knowledge (sociology, political science, cultural studies, psychology)	240	8
	Physical Culture	240	8
2)	**University component and (or) elective component**	**150**	**5**
2	Cycle of basic and specialised disciplines (DB, PD)	at least 5280	at least 176
1)	**University component and (or) elective component**		
2)	**Professional practice**		
3	Additional types of training (DVOs)		
1)	**Elective component**		
4	Final certification	at least 240	at least 8
	Total	**at least 7200**	**at least 240**

7. THE CURRICULUM FOR THE ENTIRE PERIOD OF STUDY

JSC "ALT University named after Mukhamedzhan Tynyshpaev"

Form of study: full-time

STUDY PLAN

Direction of training: 6B071 Engineering and Engineering trades

APPROVED
By the Decision of the Academic Council
of the Mukhamedzhan Tynyshpaev ALT University
dated April 25, 2024 Protocol No. 8
Chairman of the Academic Council
S.N. Amirgalieva

Duration of study: 4 years

Group of educational programs: B065 Transport equipment and technologies

Name of the educational program: 6B07174 - Intelligent technologies of transport processes (2 trajectories)

Admission: 2024

Degree: Bachelor of Engineering and Technology

№	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 a position at the department
								Classroom			IWSU		1 course		2 course		3 course		4 course			
			in academic hours	in academic credits	Exam	KP (KR)	Total hours	lectures	practical	laboratory	IWSUT	IWSU	1 term	2 term	3 term	4 term	5 term	6 term	7 term	8 term	9 term	
													15 weeks	15 weeks	15 weeks	15 weeks	15 weeks	15 weeks	15 weeks	7 weeks	8 weeks	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	CYCLE OF GENERAL EDUCATION DISCIPLINES (GED):																					
M1	The module of general education competencies																					
1.1.		**Required component:**	1530	51			1530	120	358	15	120	917	10	17	6	11	2	5	0	0	0	
1.1.1.	23-0-B-OK-IK	History of Kazakhstan	150	5	2		150	30	15		8	97		5								SHDaPE
1.1.2.	23-0-B-OK-Fil	Philosophy	150	5	6		150	30	15		8	97						5				SHDaPE
1.1.3.	23-0-B-OK-FK	Physical Culture	240	8	2,3,4,5		240		88		32	120		2	2	2	2					SHDaPE
M2	Language Competence Module																					
1.1.4.	23-0-B-OK-IYa	Foreign language	300	10	1,2		300		90		16	194	5	5								LT
1.1.5.	23-0-B-OK-K(R)Ya	Kazakh (Russian) language	300	10	1,2		300		90		16	194	5	5								LT
M3	The module of socio-political competencies																					
1.1.6.	23-0-B-OK-Sotz	Sociology	240	8	3,4		240	7	15		8	30			4							SHDaPE
	23-0-B-OK-Kul	Culturology						8	15		8	29										SHDaPE
	23-0-B-OK-Pol	Political science						7	15		8	30				4						SHDaPE
	23-0-B-OK-Psi	Psychology						8	15		8	29										SHDaPE
M4	Information Technology and Artificial Intelligence Module																					
1.1.7.	23-0-B-OK-IKT	**Information and Communication Technologies**	150	5	4		150	30		15	8	97				5						ICT
1.2.		**Component of choice:**	150	5	1		150	30	15	0	8	97	0	0	0	0	5	0	0	0	0	
M5	Life skills module																					
1.1.8.	23-0-B-KV-EBGD	Ecology and life safety	150	5	5		150	30	15		8	97					5					MV&LS
	23-0-B-KV-MNI	Scientific research methods																				SHDaPE
	24-0-B-KV-EiPD	Basics of economics and entrepreneurship																				LTM
	23-0-B-KV-OPAK	Basics of law and anti-corruption culture																				SHDaPE
	TOTAL FOR THE GED CYCLE:		1680	56	1		1680	150	373	15	128	1014	10	17	6	11	7	5	0	0	0	
2	CYCLE OF BASIC DISCIPLINES (BD):																					
2.1.		**University component:**	1860	62	12		1860	270	285	45	132	1068	16	17	12	2	9	0	6	0	0	
M6	Natural science competencies																					
2.1.1.	24-0-B-VK-IM 1	Engineering Mathematics 1	180	6	1		180	30	30		12	108	6									GE
2.1.2.	24-0-B-VK-IM 2	Engineering Mathematics 2	180	6	2		180	30	30		12	108		6								GE
2.1.3.	24-0-B-VK-PF 1	Applied Physics 1	120	4	1		120	15	15	15	12	63	4									GE
2.1.4.	24-0-B-VK-PF 2	Applied Physics 2	150	5	2		150	15	15	15	12	93		5								GE
2.1.5.	23-0-B-VK/KV-TMeh	Theoretical mechanics	180	6	3		180	30	30		12	108			6							GE
M7	Professional module																					
2.1.6.	23-0-B-VK-OT	Labor protection	180	6	7		180	30	15	15	12	108						6				MV&LS
2.1.7.	24-0-B-VK-ATiST	Automation, telemechanics and communication in transport	180	6	3		180	30	30		12	108			6							AV
2.1.8.	23-0-B-VK-UPT	Transportation management on transport	180	6	2		180	30	30		12	108		6								OTOT
2.1.9.	24-74-B-VK-STUGiKR	Modern technologies for cargo and commercial work management	180	6	5		180	30	30		12	108					6					OTOT
M4	Information Technology and Artificial Intelligence Module																					
2.1.10.	24-0-B-VK-KIM	**Computer and engineering modeling**	180	6	1		180	30	30		12	108	6									ICT, CE
2.1.11.	24-0-B-VK-OII	**The basics of artificial intelligence**	90	3	5		90		30		12	48					3					ICT
M8	Practice-oriented module																					
2.1.12.	23-0-VK-Upr	**Educational practice**	60	2	4		60									2						OTOT
2.2.		**Component of choice:**	1260	42	8		1260	210	180	30	96	744	0	0	6	18	9	9	0	0	0	
M7	Professional module																					
2.2.1.	24-74-B-KV-SPSZhD	Modern railway rolling stock	180	6	4		180	30	30		12	108				6						ПС/MV&LS
	24-74-B-KV-IAS	Intelligent motor vehicles																				
2.2.2.	24-74-B-KV-ITRZhUiN	Innovative technologies for the operation of railway sections and directions	180	6	5		180	30	15	15	12	108					6					OTOT
	24-74-B-KV-MiKDM	Modeling and coordination of traffic on highways																				
2.2.3.	24-74-B-KV-PPGZhT	Rules of cargo transportation by rail	180	6	4		180	30	30		12	108				6						OTOT
	24-74-B-KV-PPGAT	Rules for the transportation of goods by road transport																				
2.2.4.	24-74-B-KV-ITOViPP	Intelligent technologies in the organization of carriage and passenger traffic	180	6	6		180	30	30		12	108						6				OTOT
	24-74-B-KV-ITPDTP	Intelligent technologies in traffic flow planning																				

2.2.5.	24-74-B-KV-ITRZhSiU	Innovative technologies for the operation of railway stations and junctions	180	6	3		180	30	15	15	12	108			6							OTOT
	24-74-B-KV-IDAP	Innovative activities of motor transport enterprises																				
2.2.6.	24-74-B-KV-SUDP	Train traffic control systems	180	6	4		180	30	30		12	108				6						OTOT
	24-74-B-KV-BDAT	Traffic safety in road transport																				
M9	**Business skills module**																					
2.2.7.	23-0-B-UE	Managerial economics	90	3	6		90	15	15		12	48					3					LTM
	23-0-B-KV-T-M	Time -management																				
2.2.8.	24-0-B-OFG	Fundamentals of financial literacy	90	3	5		90	15	15		12	48					3					LTM
	24-0-B-KV-KM	Critical thinking																				
	TOTAL FOR THE CYCLE OF BD:		**3120**	**104**	**20**		**3120**	**480**	**465**	**75**	**228**	**1812**	**16**	**17**	**18**	**20**	**18**	**9**	**6**	**0**	**0**	
3	**CYCLE OF PROFILE DISCIPLINES (PD):**																					
3.1.		**University component:**	**1560**	**52**	**68**	**0**	**1560**	**225**	**225**	**0**	**108**	**792**	**0**	**0**	**3**	**3**	**6**	**15**	**15**	**6**	**4**	
M7	**Professional module**																					
3.1.1.	24-74-B-VK-TIITS	Artificial intelligence technologies in transport systems	180	6	7		180	30	30		12	108						6				ICT
3.1.2.	24-74-B-VK-ITRTU	Intelligent technologies for the operation of a transport hub	180	6	5		180	30	30		12	108					6					OTOT
3.1.3.	24-74-B-VK-UERT	Management of operational work in transport	180	6	6		180	30	30		12	108					6					OTOT
3.1.4.	24-74-B-VK-IIPK	Innovative infrastructure of the passenger complex	180	6	6		180	30	30		12	108					6					OTOT
3.1.5.	24-74-B-VK-TRPT	Technology of operation of passenger terminals	180	6	8		180	30	30		12	108							6			OTOT
M8	**Practice-oriented module**																					
3.1.6.	24-74-B-VK-ISOBD	Intelligent traffic safety systems	180	6	7		180	30	30		12	108						6				OTOT
3.1.7.	23-0-B-VK-PPr1	**Industrial practice 1**	90	3	6		90										3					OTOT
3.1.8.	23-0-B-VK-PPr2	**Industrial practice 2**	120	4	9		120														4	OTOT
3.2.8.	**The module of minor programs**																					
	24-0-B-MN1	**Minor program 1**	90	3	3		90	15	15		12	48			3							
	24-0-B-MN2	**Minor program 2**	90	3	4		90	15	15		12	48				3						
	24-0-B-MN3	**Minor program 3**	90	3	7		90	15	15		12	48							3			
3.2.		**Component of choice:**	**630**	**21**	**3**		**630**	**105**	**105**	**0**	**36**	**384**	**0**	**0**	**0**	**0**	**0**	**0**	**12**	**9**	**0**	
M7	**Professional module**																					
3.2.1.	24-0-B-KV-PriEZhD	Railway design and operation	180	6	7		180	30	30		12	108							6			CE
	24-0-B-KV-PriEAD	Design and operation of highways																				
3.2.2.	24-74-B-KV-TSiZhU	Technical stations and railway junctions	270	9	8		270	45	45		12	168								9		OTOT
	24-74-B-KV-PrTOPTUG	Designing transport facilities using Smart City technology																				
3.2.3.	24-74-B-KV-RPZhD	Separate railway stations	180	6	7		180	30	30		12	108							6			OTOT
	24-74-B-KV-ITAiGI	Intelligent technologies in the automotive and urban infrastructure																				
	TOTAL FOR THE CYCLE OF PD:		**2190**	**73**	**71**		**2190**	**330**	**330**	**0**	**144**	**1176**	**0**	**0**	**3**	**3**	**6**	**15**	**27**	**15**	**4**	
	Total for theoretical training:		**6990**	**233**	**92**		**6990**	**960**	**1168**	**90**	**500**	**4002**	**26**	**34**	**27**	**34**	**31**	**29**	**33**	**15**	**4**	
4	**23-0-B-VK-IA**	**FINAL CERTIFICATION**	**240**	**8**																	**8**	OTOT
	TOTAL FOR THE ENTIRE PERIOD OF STUDY:		**7230**	**241**	**92**								**26**	**34**	**27**	**34**	**31**	**29**	**33**	**15**	**12**	
5	**Additional types of training:**																					
	24-0-B-DVO-SO	Service to the Society	30	1	1		30		10		8	12	1									

AGREED:

Vice-Rector for AA _____ Zharmagambetova M.S.

Director DAPQ _____ Lipskaya M.A.

DEVELOPED BY:

ДиректDirector of the Institute "LaM" _____ Musaeva G.S

Head of the Department of "OTOT" _____ Bitileuova Z.K.

8. CATALOG OF DISCIPLINES OF THE UNIVERSITY COMPONENT

EDUCATIONAL PROGRAMS **6B07174- Intelligent technologies of transport processes**

Education level: Bachelor's degree **Duration of study: 4 years** **Year of admission: 2024 y.**

Cycle	Component	Total labor intensity	Total labor intensity		Semester	Learning outcome	Brief description of the discipline	Prerequisites	Post-requisites
			in academic hours	in academic credits					
1	2	3	4	5	6	7	8	9	10
BD	UC	Engineering Mathematics1	180	6	1	LO4	The discipline studies the basic concepts of higher mathematics and its applications. The purpose of the course is to master the mathematical apparatus for solving theoretical and applied problems of a specific profile, to get an idea of mathematical modeling and interpretation of the solutions obtained. The course sections include elements of linear algebra and analytical geometry, an introduction to mathematical analysis, differential calculus of functions of one and several variables	Disciplines of the school component	Engineering Mathematics2
BD	UC	Engineering Mathematics2	180	6	2	LO4	The formation of students' mathematical knowledge and skills necessary for the study of related natural science disciplines, disciplines of the professional cycle and skills of mathematical modeling and research in professional activities. The course sections include integral calculus of functions of one and several variables, ordinary differential equations, and series theory. Special attention is paid to the application of mathematical methods to solve engineering problems.	Engineering Mathematics1	Theoretical mechanics
BD	UC	Applied Physics1	120	4	1	LO4	The discipline studies the simplest and at the same time the most general laws of natural phenomena, the properties and structure of matter, and the laws of its motion. The course of kinematics reflects the basic equations of dynamics, equations of motion, the limits of applicability of classical mechanics, stable time, moment of time and energy, statistical physics and thermodynamics, electricity and magnetism..	Disciplines of the school component	Applied Physics2
BD	UC	Applied Physics2	150	5	2	LO4	The discipline studies the phenomena of electromagnetic induction, electromagnetic vibrations and waves, the laws of optics, the basic principles of quantum mechanics, physics and elements of atomic nucleus physics. The structure of atomic nuclei. Nuclear forces. Patterns of alpha-beta and gamma radiation. The course reflects the current state of modern physics and combines macroscopic and microscopic approaches.	Applied Physics1	Theoretical mechanics
BD	UC	Theoretical mechanics	180	6	3	LO4	Formation of scientific engineering thinking, familiarization with the basic concepts, laws and theorems that allow you to make equations describing the behavior of	Engineering Mathematics2, Applied	Modern railway rolling stock,

							mechanical systems, the ability to record a specific phenomenon in mathematical form, the application of basic methods of mechanics in the study of motion and equilibrium of mechanical systems in the study of disciplines of the professional cycle.	Physics2	Intelligent motor vehicles
BD	UC	Labor protection	180	6	7	LO5	The discipline examines the main dangerous and harmful production factors affecting workers of automobile and railway transport, during the operation and repair of rolling stock, advanced methods and technical solutions to reduce occupational injuries, improve working conditions and workplace safety, ways of organizing and managing occupational safety, fire and electrical safety, the main activities in the organization jobs. Training methods - analysis of specific situations, group discussions.	Ecology and life safety	Designing transport facilities using Smart City technology, Technical stations and railway junctions
BD	UC	Automation, telemechanics and communication in transport	180	6	3	LO11	Formation of knowledge and skills in automation, telemechanics and communications systems that establish the procedure for operating railway transport in compliance with traffic safety in all situations, including emergency situations, using modern traffic control systems. Studying methods for assessing performance indicators, technical characteristics and technical condition of automation and telemechanics devices, justifying the choice of standard devices for specific application. Active teaching methods are used: role-playing games, group work, case assignments.	Computer and engineering modeling	Train traffic control systems, Traffic safety in road transport, Innovative infrastructure of the passenger complex
BD	UC	Transportation management on transport	180	6	2	LO8	The study of the principles of organization of transportation and management of the transportation process on various types of transport, the regulatory framework in the field of organization of transportation on transport. Formation of skills for the effective use of material and technical values and rolling stock, solving issues of technical means of transport, studying cargo and passenger flows, solving problems of the transportation process using information technology. When studying the discipline, interactive methods, solving case tasks, solving practical problems are used..	Disciplines of the school component	Rules of cargo transportation by rail, Rules for the transportation of goods by road transport, Innovative infrastructure of the passenger complex, Train traffic control systems
BD	UC	Modern technologies for cargo and commercial work management	180	6	5	LO10	The study of the technology of cargo and commercial operations with the use of modern innovative automated control systems in transport, ensuring the rational use of the load capacity of wagons, timely delivery and safety of transported goods. Obtaining skills in developing optimal technical and technological schemes for cargo delivery, taking into account the needs of the industry, filling in transport and shipping documentation for the organization of transportation using the latest technologies.	Rules of cargo transportation by rail, Rules for the transportation of goods by road transport, Train traffic control systems	Intelligent traffic safety systems, Management of operational work in transport
BD	UC	Computer and engineering modeling	180	6	1	LO3	The study of the discipline makes it possible to master the basic images of spatial forms on a plane and teach how to work in modern modeling systems in order to develop innovative computer models, and also contributes to the development of spatial representation and imagination, constructive geometric thinking based on graphical models of spatial forms and practical skills in building computer models, applying them to solving real problems.	Disciplines of the school component	Automation, telemechanics and communication in transport, Информационно-коммуникационные технологии
BD	UC	The basics of artificial intelligence	90	3	5	LO3	The discipline introduces students to the basic concepts, methods and applications of artificial intelligence. The purpose of the course is to provide students with basic knowledge about the possibilities and applications of artificial intelligence in the modern world and their significance for various fields of activity	Computer and engineering modeling	Intelligent traffic safety systems, Artificial intelligence technologies in transport systems, Intelligent technologies for the operation of a transport hub
PD	UC	Artificial intelligence technologies in transport systems	180	6	8	LO9	Students study artificial intelligence, machine learning and data analysis technologies, as well as specific methods of applying artificial intelligence in transport systems, such as traffic flow management, route optimization, traffic forecasting and automation of	The basics of artificial intelligence, Intelligent technologies for the	Final certification

							transport processes. They are diving into the field of developing intelligent transport management systems, including autonomous driving systems and smart urban transport systems.	operation of a transport hub	
PD	UC	Intelligent technologies for the operation of a transport hub	180	6	6	LO9	Developing a systematic understanding of the organization of interaction in transport hubs, studying the technology of intelligent control of the operation of a transport hub, familiarization with theoretical and practical achievements in the organization of the operation of a transport hub, their connections during interactions in transport hubs, willingness to use promising technologies in the development of technological processes for the functioning of objects of professional activity, based on the need to ensure rational modes of operation of transport enterprises and vehicles	The basics of artificial intelligence, Scientific research methods	Artificial intelligence technologies in transport systems, Technical stations and railway junctions
PD	UC	Management of operational work in transport	180	6	6	LO8	The study of innovative technologies for managing operational work in railway transport, the principles of technical regulation of the organization of transportation in railway transport, the principles of organizing train traffic, organizing the transportation process according to the transportation plan, organizing carriage and train flows based on a network-wide train formation plan, train movement according to schedule and the technological process of stations, ensuring train safety	Modern technologies for cargo and commercial work management, Basics of law and anti-corruption culture	Railway design and operation, Design and operation of highways, Technical stations and railway junctions
PD	UC	Innovative infrastructure of the passenger complex	180	6	5	LO2 LO12	Study of the theoretical foundations and practical aspects of the functioning of the passenger infrastructure, ensuring the efficient movement of passengers and management of relevant transport and information flows in passenger complexes of various sizes and purposes; regulatory documents for the interaction of different modes of transport in a single transport system. Acquiring knowledge about modern trends and innovations in the field of infrastructure of passenger complexes using intelligent technologies	Automation, telemechanics and communication in transport, Transportation management on transport	Intelligent traffic safety systems, Intelligent technologies in the organization of carriage and passenger traffic, Intelligent technologies in traffic flow planning
PD	UC	Technology of operation of passenger terminals	180	6	8	LO12	Study of the characteristics of technical support for passenger transportation in long-distance, local and suburban services; passenger terminal operating technologies; developing skills to identify problems in the field of passenger service during the interaction of various modes of transport using intelligent technologies; forecasting and analysis of characteristics of passenger flows at terminals, principles of formation of the city's route network, classification of routes; issues of organizing passenger transportation in transport.	Intelligent traffic safety systems	Final certification
PD	UC	Intelligent traffic safety systems	180	6	7	LO11	Study of traffic safety standards and requirements governing the functioning of transport infrastructure and traffic safety, analysis of traffic safety in various emergency and emergency situations using modern intelligent traffic control systems; formation of skills in planning and implementing preventive measures that contribute to improving the level of trouble-free operation in all production processes.	Modern technologies for cargo and commercial work management, The basics of artificial intelligence, Innovative infrastructure of the passenger complex	Technology of operation of passenger terminals, Designing transport facilities using Smart City technology

9. CATALOG OF DISCIPLINES OF THE COMPONENT BY CHOICE

EDUCATIONAL PROGRAMS **6B07174- Intelligent technologies of transport processes**

Education level: Bachelor's degree **Duration of study: 4 years** **Year of admission: 2024 y.**

Cycle	Component	Total labor intensity	Total labor intensity		Semester	Learning outcome	Brief description of the discipline	Prerequisites	Post-requisites
			in academic hours	in academic credits					
1	2	3	4	5	6	7	8	9	10
BD	EC	Scientific research methods	150	5	5	LO4	The discipline provides knowledge and ideas about the content of scientific activity, its methods and forms of knowledge. The theoretical and applied knowledge obtained by students on the methods of scientific research of problems in the studied area, instills in future specialists, cognitive skills in the field of science. Methods of active learning - group, scientific discussion, dispute, project method.	Sociology, Political Science	Intelligent technologies for the operation of a transport hub, Managerial Economics
		Basics of law and anti-corruption culture				LO1	The discipline outlines the fundamental concepts of law, the constitutional structure of the state power of the Republic of Kazakhstan, the rights and freedoms of citizens enshrined in the Constitution, the mechanism and protection of legitimate human interests in case of their violation. The discipline forms students' improvement of public and individual legal awareness and legal culture, as well as a system of knowledge and citizenship on combating corruption as an antisocial phenomenon. Methods of active learning - analysis of specific situations, brainstorming.	Sociology, Political Science	Management of operational work in transport, Time - management
		Economics and business activities				LO7	Studies the activities of enterprises in various types of market, the model of equilibrium and functioning of the market, state regulation of prices and tariffs. Examines the concept of entrepreneurship and the limits of its legal regulation, the conditions for the development of entrepreneurship, organizational and legal forms of doing business, business planning, business secrecy, social responsibility of entrepreneurship..	Sociology, Psychology	Managerial Economics, Time -management, Fundamentals of financial literacy
		Ecology and life safety				LO4	The discipline studies the main approaches to solving environmental problems, ensuring safe life, sources and types of pollutants of construction production, methods of reducing emissions of harmful substances into the environment, natural and man-made emergencies, their causes, methods of prevention and protection, environmental protection, rescue and other urgent work, rules of behavior of people in extreme conditions	Traffic safety in road transport	Labor protection

BD	EC	Modern railway rolling stock	180	6	4	LO6	The discipline is aimed at the formation of professional competencies in the field of technical solutions to improve, modern industrial and environmental trends associated with an effective method of eliminating problems in the operation and maintenance of railway transport. Studies the device of modern locomotives and cars, the design of modern unmanned trains of Kazakhstan and foreign countries, the design and prospects of development of unmanned transportation systems	Theoretical mechanics, Innovative technologies for the operation of railway stations and junctions	Innovative technologies for the operation of railway sections and directions, Railway design and operation
		Intelligent motor vehicles				LO6	The discipline studies the main directions of the functioning of intelligent systems in transport; methods and technology of automated regulation of rolling stock flows; advanced technologies and scientific organizations for traffic management; methods, methods and means of operation of intelligent vehicles; unmanned vehicles, their device and operation; the use of software and hardware to ensure information security of telematics systems	Theoretical mechanics, Innovative activities of motor transport enterprises	Modeling and coordination of traffic on highways, Design and operation of highways
BD	EC	Innovative technologies for the operation of railway sections and directions	180	6	5	LO8	The study of innovative technologies of the transportation process in railway transport based on domestic and foreign experience, consideration of integrated approaches in the organization of train traffic on railway sections and directions, taking into account the safety of train traffic, effective organization of car traffic, innovative systems for organizing train traffic and communications. Formation of skills for calculating the capacity of railway sections and the procedure for building a train schedule	Modern railway rolling stock, Rules of cargo transportation by rail	Intelligent technologies in the organization of carriage and passenger traffic
		Modeling and coordination of traffic on highways				LO8	Studying methods of traffic control of transport and pedestrian flows on road networks. Formation of skills in calculating traffic flow parameters (intensity, speed, density, composition, unevenness); determining the level of congestion in areas, characteristics of pedestrian movement; analysis of transport and operational indicators and interaction of vehicles on highways; modeling and coordination of traffic using innovative technologies, taking into account the impact on the environmental situation	Computer and engineering modeling, Intelligent motor vehicles, Rules for the transportation of goods by road transport	Intelligent technologies in traffic flow planning
BD	EC	Rules of cargo transportation by rail	180	6	4	LO2 LO9	The study of the norms and rules necessary for the transportation of various goods by rail, the basic rules, principles of organization and conditions of cargo transportation, which form an important part of the transport process. Acquisition of skills in planning the transportation of goods by rail, registration and filling in an invoice and a set of transportation documents in national and international communications, drawing up an accounting card for the implementation of a cargo transportation plan.	Transportation management on transport	Innovative technologies for the operation of railway sections and directions
		Rules for the transportation of goods by road transport				LO9	Study of transport characteristics and rules for the transportation of various goods, their interaction with the environment, warehousing systems and ensuring the safety of goods during storage, transshipment and transportation, as well as requirements for containers, packaging materials, vehicles and loading unloading mechanisms when transporting various types of cargo by road. Formation of skills in applying the norms and rules governing the transportation of various goods by road	Transportation management on transport	Modeling and coordination of traffic on highways
BD	EC	Intelligent technologies in the organization of carriage and passenger traffic	180	6	6	LO9	The study of the principles of the organization of carriage and passenger flows, the formation of skills in the application of basic methods, methods and means of planning traffic flows to solve problems of optimizing the promotion of carriage and passenger flows, as well as the basics of developing plans for the formation of freight and passenger trains using intelligent technologies, in the context of the introduction of automated control systems for the operation of transport facilities with elements of artificial intelligence.	Innovative infrastructure of the passenger complex, Innovative technologies for the operation of railway sections and directions	Railway design and operation, Technical stations and railway junctions, Separate railway stations
		Intelligent technologies in traffic flow planning				LO9	Study of a complex of systems for the efficient operation of the transport network using information, transport and communication technologies for managing road infrastructure and vehicles. Formation of skills in collecting, processing, integrating and applying data in transport planning; performing the functions of dispatcher and operational control of traffic flows and coordinating their interaction using intelligent	Innovative infrastructure of the passenger complex, Modeling and coordination of traffic on highways	Design and operation of highways, Designing transport facilities using Smart City technology, Intelligent technologies

							transport systems.		in the automotive and urban infrastructure
BD	EC	Innovative technologies for the operation of railway stations and junctions	180	6	3	LO8	The study of the principles of the development of technological processes for the operation of railway stations and nodes, methods of managing train and shunting operations at stations, taking into account throughput and processing capabilities. Formation of skills in the organization and management of technological processes at the station, calculation of operational indicators and construction of a daily schedule of the station"s operation using innovative technologies in safety conditions. Training equipment is used to practice the actions of the station"s operational personnel	Theoretical mechanics	Modern railway rolling stock
		Innovative activities of motor transport enterprises				LO8	Studying the forms and methods of organizing innovative activities of road transport enterprises based on global trends. Formation of skills in developing technological processes for the operation of motor transport enterprises; analysis of transport provision of cities and regions, forecasting and planning for the development of transport systems; improving systems for organizing transportation and transport management, taking into account the capabilities of modern information technologies and intelligent transport systems	Theoretical mechanics	Intelligent motor vehicles
BD	EC	Train traffic control systems	180	6	4	LO11	Studying the principles of construction and methods of analysis of railway train control systems and acquiring on this basis the necessary knowledge to improve the quality of management of the industry and, above all, its operational activities; the best use of fixed assets, material and labor resources; mastering the increasing volume of traffic; improving the technical and economic performance of the industry using management systems train traffic	Automation, telemechanics and communication in transport, Transportation management on transport	Modern technologies for cargo and commercial work management, Separate railway stations
		Traffic safety in road transport				LO11	Study of the principles of organization and operation of motor transport in ensuring safety, including in various emergency and emergency situations using modern traffic control systems; mastering the skills of analyzing conditions related to ensuring traffic safety during the transportation of goods and passengers, drawing up plans for work to ensure road safety in road transport	Automation, telemechanics and communication in transport	Ecology and life safety, Intelligent technologies in the automotive and urban infrastructure
BD	EC	Managerial Economics	90	3	6	LO7	Formation of the conceptual apparatus and development of skills of economic analysis using modern models and patterns of economic science, consideration of economic problems and challenges facing the head of the firm. The study of this discipline will allow students to obtain and develop knowledge in the field of analytical research of economic, technological and technical parameters of the enterprise, as well as allow you to master the skills of using special methods of economic justification of management decisions and assessment of their consequences.	Scientific research methods, Economics and business activities, Fundamentals of financial literacy	Final certification
		Time -management				LO7	The discipline studies a system of methods, tools and approaches that are aimed at effective time management in order to achieve set goals. The course is designed to improve skills in organizing and optimizing the use of working time, increasing productivity, reducing stress, planning, delegation, using tools and technologies, as well as knowing your time and energy rhythms in order to use your time effectively..	Basics of law and anti-corruption culture, Economics and business activities, Critical thinking	Final certification
BD	EC	Fundamentals of financial literacy	90	3	5	LO7	Formation of general functional economic and financial literacy, mastering methods and tools of economic and financial calculations for solving practical problems	Economics and business activities	Managerial Economics
		Critical thinking				LO7	The discipline studies the forms and techniques of rational cognition, the creation of a general idea of logical methods and approaches used in the field of professional activity, the formation of practical skills of rational and effective thinking.	Psychology, Cultural studies	Time -management
PD	EC	Railway design and operation	180	6	7	LO6	To design railways of different categories with the definition of technical parameters for new and reconstruction of railway lines according to norms and rules, ensuring their safety, including rolling stock, software complexes, in various natural and economic, engineering and geological conditions, calculating the appropriate	Management of operational work in transport, Modern railway rolling stock,	Technical stations and railway junctions

							construction costs and rational timing of changes in design solutions, principles of their comparison using innovative technologies.	Intelligent technologies in the organization of carriage and passenger traffic	
		Design and operation of highways				LO6	To choose technical solutions according to regulatory standards and safety rules in the design and construction of transport and urban infrastructure facilities using innovative technologies of road coverings, taking into account climatic and engineering-geological conditions, principles of construction, operation and reconstruction of highways with modern machines and mechanisms and software for calculating the corresponding costs for the construction and further operation of highways..	Management of operational work in transport, Intelligent motor vehicles, Intelligent technologies in traffic flow planning	Designing transport facilities using Smart City technology
PD	EC	Technical stations and railway junctions	270	9	8	LO6	Study of the principles of design, arrangement and equipment of technical stations and nodes, types of longitudinal, transverse profiles and structural elements of the roadbed of the track development of precinct and marshalling yards. Formation of skills in choosing the types and optimal location of station devices, buildings and structures, taking into account the requirements of dimensions, using intelligent technologies. The discipline provides for the development and protection of an individual project	Intelligent technologies for the operation of a transport hub, Management of operational work in transport, Intelligent technologies in the organization of carriage and passenger traffic, Railway design and operation	Final certification
		Designing transport facilities using Smart City technology				LO6	Studying the concept of urban transport development, including transport engineering, transport planning, design of facilities using innovative Smart City technologies, the fundamentals of the theory of space, aesthetics and urban landscape. Mastering the skills of constructing intelligent transport routes, studying the dynamics of population movement in the road network, taking into account data on traffic conditions, traffic speed, delays in sections and the operation of transport facilities	Labor protection, Intelligent traffic safety systems, Intelligent technologies in traffic flow planning, Design and operation of highways	Final certification
PD	EC	Separate railway stations	180	6	7	LO6	Study of classification, placement, standard schemes of separate points of the railway network, principles of their design and reconstruction. Acquisition of skills of independent design, justification and decision-making on changing the design, technical equipment and technology of work, mastering methods of increasing the throughput and processing capacity of railway separate points. The discipline involves the use of the group design method. Guest lectures are held with the participation of employers	Train traffic control systems, Intelligent technologies in the organization of carriage and passenger traffic	Final certification
		Intelligent technologies in the automotive and urban infrastructure				LO6	The formation of students' basic concepts and directions in the field of organization and development of intelligent transport systems, in familiarization with existing intelligent systems that are used to organize and manage the transport process, as well as the formation of an idea about the main objects of engineering structures that make up the urban infrastructure and the main intelligent transport systems and technologies used in the automobile and road complex	Traffic safety in road transport, Intelligent technologies in traffic flow planning	Final certification

10. EXPERT OPINIONS

EXPERT OPINION

For an educational program
6B07174 – Intelligent technologies of transport processes

The implementation of the educational program 6B07174 – «Intelligent technologies of transport processes» is carried out through the integrity of the studied disciplines, with the establishment of certain tasks and target indicators. Interdisciplinary interaction is clearly traced, which consists in a complex connection between the content of individual academic disciplines, through which the internal unity of the specialist-training program is achieved.

The curriculum of the educational program includes a list of all academic disciplines of the compulsory component and the elective component, the complexity of each academic discipline in credits, the sequence of their study, types of training sessions and forms of control. It is important to study the issues of introducing new technologies to ensure acceptable conditions for safe work at enterprises of the transport and transportation complex.

Educational routes have been developed in accordance with the requests of the transportation industry. The catalogues of university and elective modules include disciplines that allow you to master the basic personal and professional competencies, as well as perform labor functions reflected in the professional standards of the transport industry.

The task of the educational program is relevant, formulated quite succinctly and combines the learning outcomes. The description of the disciplines reflects their goals and content as an indicator of the achievement of learning outcomes in this educational program. Also, the educational program, developed on the basis of a professional standard, reflects the main work responsibilities in competencies and learning outcomes, indicates the types of relationships with employers: conducting guest lectures, lectures by leading top managers, the presence of branches of departments based on production organizations.

Thus, the educational program "6B07174 – Intelligent technologies of transport processes" submitted for examination in the field of personnel training "Engineering and Engineering" fully complies with the requirements of the State Standard, has a clear integrity during development, meets modern labor market demands, professional standards and can be implemented for training personnel under the educational program 6B07174 – Intelligent technologies of transport processes in the field of personnel training 6B071 – Engineering and engineering.

The expert
Director of Commercialization
SIC LLP «Development of the transportation process» **Sman A.**

EXPERT OPINION

For an educational program
6B07174 – Intelligent technologies of transport processes

The bachelor's degree program 6B07174 – «Intelligent technologies of transport processes» contains the following information: the direction and characteristics of the graduates' activities, the graduate's qualifications, the form and duration of study, the necessary list of qualifications that the graduate must possess as a result of mastering this educational program.

The disciplines that students study according to the curriculum of the reviewed educational program form the necessary list of general cultural and professional competencies provided by the State Educational Standard for the relevant types of activities.

The curriculum of the educational program defines a list of all academic disciplines of the compulsory component and the elective component, the complexity of each academic discipline in credits, the sequence of their study, types of training sessions and forms of control. The sequence of studying disciplines has been observed, the disciplines necessary for the organization of production work and compliance with the cycle of the technological process have been included.

The content of the work programs of academic disciplines and practices allows us to conclude that it corresponds to the graduate's competence model.

The educational program provides professional and practical training of students in the form of practice. The content of the practice programs testifies to their ability to form the practical skills of students.

To develop the educational program, experienced teaching staff, leading representatives of the employer, students were involved, and their requirements were taken into account when forming disciplines of the professional cycle.

Conclusion:

In general, the reviewed educational program meets the basic requirements of the State Educational Standard, the national qualifications framework, the industry qualifications framework, professional standards, the atlas of new professions and contributes to the formation of general cultural and professional competencies in the field of personnel training 6B071.

The expert
Chief
Department of Dispatching transportation Management
TransCom LLP **Kosybaev K.**

11. REVIEWER'S CONCLUSION

Review

for an educational program
6B07174 – Intelligent technologies of transport processes in the field of personnel training 6B071 – Engineering and engineering

The bachelor's degree program 6B07174 – «Intelligent technologies of transport processes» contains the following information: the direction and characteristics of the graduates' activities, the graduate's qualifications, the form and duration of study, the necessary list of qualifications that the graduate must possess because of mastering this educational program.

The disciplines that students study according to the curriculum of the reviewed educational program form the necessary list of general cultural and professional competencies provided by the State Educational Standard for the relevant types of activities.

The curriculum of the educational program defines a list of all academic disciplines of the compulsory component and the elective component, the complexity of each academic discipline in credits, the sequence of their study, types of training sessions and forms of control. The catalog of elective disciplines, the Catalog of the intra-university component fully reflect the continuity of disciplines, among which the following disciplines should be noted: «Innovative technologies for the operation of railway sections and directions», «Innovative infrastructure of the passenger complex», «Intelligent technologies in the organization of carriage and passenger flows», «Intelligent technologies in the organization of carriage and passenger flows», «Modern intelligent traffic safety systems», etc.

The sequence of studying disciplines has been observed; the disciplines necessary for the organization of production work and compliance with the cycle of the technological process have been included.

The content of the work programs of academic disciplines and practices allows us to conclude that it corresponds to the graduate's competence model.

The educational program provides professional and practical training of students in the form of practice. The content of the practice programs testifies to their ability to form the practical skills of students.

To develop the educational program, experienced teaching staff, leading representatives of the employer, students were involved; their requirements were taken into account when forming disciplines of the professional cycle.

Conclusion:

In general, the reviewed educational program meets the basic requirements of the State Educational Standard, the national qualifications framework, the industry qualifications framework, professional standards, the atlas of new professions and contributes to the formation of general cultural and professional competencies in the field of personnel training 6B071 – Engineering and Engineering.

The reviewer

TransCom LLP
Director of the Department
for Transportation activities **Zhumataev A.Zh.**

12. LETTERS OF RECOMMENDATION

ҒЫЛЫМИ-
ЗЕРТТЕУ
ОРТАЛЫҚ

НАУЧНО-
ИССЛЕДОВАТЕЛЬСКИЙ
ЦЕНТР

РАЗВИТИЕ ПЕРЕВОЗОЧНОГО
ПРОЦЕССА

21418
10. 02. 2024 г.

Alt University named after M. Tynyshpayev
President-rector.
Amirgalieva S. N.

Dear Saltanat Nuradilovna!

The management of SRC «Development of the transport process « LLP on behalf of the Director of commercialization A. Smanov got acquainted with the content of the educational program 6B07174 – «Intelligent technologies of transport processes» and made the following recommendations:

- introduction of disciplines in the content of the educational program that form the competence of the manager of critical thinking;
- increase the number of hours allocated for conducting part of practical training at employers ' production facilities in order to form high-quality professional qualifications;
- development of the content of educational programs through the introduction into the cycle of basic and profile modules of disciplines reflecting new innovative technologies in the field of transport and communication;
- increase the number of hours allocated for conducting production practices;
- development and coordination of the Industrial Practice program with the requirements of employers;

add subjects:

- contributes to the study of innovative technologies in the transportation process;
- forming skills in the field of Organization of the international transportation process;
- when studying them, Software Technologies are used.

In general, the peer – reviewed educational program meets the basic requirements of the state educational standard, the National Qualifications Framework, the industry qualifications framework, professional standards, the Atlas of new professions and contributes to the formation of general cultural and professional competencies in the direction of 6B071-Engineering and engineering-training.

Director of commercialization **Smanov A.**

«ТрансКом»
Жауапкершілігі шектеулі
серіктестігі

А25D7М2, Қазақстан
Республиқасы, Алматы қаласы,
Достық даңғылы 291/32

ТрансКом

E: info-tc@erg.kz

Товарищество с
ограниченной
ответственностью
«ТрансКом»

А25D7М2, Республика
Казахстан, город Алматы,
проспект Достык 291/32

Исх.№ 1414-1
« 9 » 02 2024 ж/г

President-Rector of ALT University
named after M.Tynyshpaeva
S. Amirgalieva.N.

Dear Salihat Nuradilovna!

The management of Transcomtrans LLP, represented by the Director of the Department of Transportation Activities, got acquainted with the content of the educational program "Organization of transportation, movement and operation of transport" and made the following recommendations:

- to include in the content of the educational program the disciplines that form the competence of the manager of critical thinking;
- to increase the number of hours allocated for conducting part of the practical training at the production bases of employees in order to form high-quality professional qualifications;
-to develop meaningful educational programs by including in the cycle of basic and profile modules of disciplines reflecting new innovative technologies in the transport and communication sphere;
- increase the number of hours allocated for conducting production practices;
- develop and coordinate a work practice program with the requirements of employees;

disciplines:

- contributing to the study of innovative technologies in the transportation process;
- forming skills in the field of organization of the international transportation process;
- in the study of which software technologies are used.

Director of the Transportation Department
TransCom LLP **Zhumataev A.**

Исп: Айкумбеков М.Н.
+7 (727) 258 18 18 (вн.1818)

13. PROTOCOLS OF REVIEW AND APPROVAL

Академия логистики и транспорта

ВЫПИСКА ИЗ ПРОТОКОЛА №6

город Алматы **14.02.2024**

Заседания кафедры
«Организация перевозок и эксплуатация транспорта»

Председатель: Битилеуова З.К.
Секретарь: Суйенишова М.Е.

Присутствовали: зав.каф. «ОПЭТ» к.т.н., ассоц.профессор Битилеуова З.К., к.т.н., ассоц. профессоры: Вахитова Л.В.., Альтаева Ж.Ж., к.т.н., ассистент-профессоры: Молгаждаров А.С., Абибуллаев С.Ш., Айкумбеков М.Н., ассистент-профессор: Бекмагамбетова Л.К., сениор-лекторы: Олжабаева Р.С., Айпенов Ж.С., Нуржаубаев М.М., ассистент-преподаватель: Суйенишова М.Е., специалист Есболатұлы О.

Представители с производства: Директор по коммерциализации ТОО НИЦ «Развитие перевозочного процесса» - Сман А., Начальник отдела диспетчерского управления перевозками ТОО «ТрансКом» - Косыбаев К.К., Специалист-аналитик отдела диспетчерского управления перевозками - Айкумбеков М.Н., Директор департамента по организации перевозок ТОО «КТЖ-Грузовые перевозки» - «Дирекция по организации перевозочного процесса» - Рахметжанов А.Е., Директор департамента по перевозочной деятельности ТОО «Транском» - Жуматаев А.Ж., Начальник станции Балхаш-1 филиала ТОО «КТЖ-Грузовые перевозки» - Карагандинское отделение ГП - Искаков Е.А., Директор научно-исследовательского института по безопасности дорожного движения –Масанов А., Директор автобусного парка -3, г.Алматы – Кундакбаев С.М., Казахстанский дорожный НИИ, -директор департамента стандартизации и информации – Айдарбеков Е.К.

Обучающиеся: по ОП 6В11326 – ОПДЭТ Кошербаева С., по ОП 6В11367-ОДД Қарсыбаев А.Б, по ОП 7М11351/52-ОПДЭТ – Асанов А, 7М11353-ЭЭИВЖТ – Матибрахимов А.Ф., по ОП 8D11361-ОПДЭТ – Сагитжанова М.Ж.

ПОВЕСТКА ДНЯ:

4. Разное
4.2 Рассмотрение компетентностной модели выпускника
4.3 Рассмотрение возможности включения дисциплин в КЭД и РУП

По четвертому вопросу (4.2) повестки дня ВЫСТУПИЛ: Зав.кафедрой Битилеуова З.К. предложил рассмотреть компетентностную модель выпускника по 3 уровням образования: бакалавриат, магистратура, докторантура. Представлены образовательные программы 6В11326-ОПДЭТ, 6В11367-ОДД, 6В07174-ИТТП, 7М11351/52-ОПДЭТ, 7М11353-ЭЭИВЖТ, 8D11361-ОПДЭТ.

Компетентностная модель выпускника включает в себя следующие части:

- Цель и задачи образовательной программы;
- Результаты обучения;
- Область, объекты, виды и функции профессиональной деятельности;
- Перечень должностей по образовательной программе;
- Профессиональные сертификаты, полученные по окончании обучения;
- Требования к предшествующему уровню образования.

ВЫСТУПИЛ: Представитель работодателей: Абдреев Г.А., который предложил в силу специфики их организации отразить в объектах профессиональной деятельности следующее: процессы организации и управления эксплуатационной деятельности пассажирского и грузового транспорта. Отметил необходимость реализации новой (инновационной) образовательной программы 6В07174-ИТТТ, которую планируется внести в направление подготовки кадров «Инженерия и инженерное дело». В рамках данной образовательной программы необходимо отражать инновационные технологии на транспорте, которые уже применяются в мировой практике.

ВЫСТУПИЛ: Ассоциированный профессор АЛиТ Молгаждаров А.С., который предложил в образовательных программах учесть проведение ряда практических занятий на производственной базе, в филиале кафедры в филиале «ТОО-Грузовые перевозки» - «Алматинское отделение ГП». Кроме того, следует внести в учебные планы актуализированные дисциплины, которые требуется согласовать с представителями работодателей.

После рассмотрения компетентностной модели выпускника было предложено утвердить данную Модель по 3 уровням образования для образовательных программ 6В11326-ОПДЭТ, 6В11367-ОДД, 6В07174-ИТТП, 7М11351/52-ОПДЭТ, 7М11353-ЭЭИВЖТ, 8D11361-ОПДЭТ.

ПОСТАНОВИЛИ:

4.2.1 Представить компетентностную модель выпускника по 3 уровням образования: бакалавриат, магистратура, докторантура по образовательным программам 6В11326-ОПДЭТ, 6В11367-ОДД, 6В07174-ИТТП, для рассмотрения и утверждения на Совете института «Логистика и управление».

По четвертому вопросу (4.3) повестки дня ВЫСТУПИЛ: Зав.кафедрой Битилеуова З.К. с предложением заслушать представителей работодателей и обучающихся по включению новых дисциплин в КЭД и РУП приема 2024 г.

ВЫСТУПИЛ: представитель работодателей Жуматаев А.Ж.

Организации заинтересованы в специалистах, имеющих хороший уровень подготовки и знаний в области организации перевозок, движения и эксплуатации транспорта. Вносим предложения о вынесении в модуль Практико-ориентированных дисциплин дисциплины «Транспортная безопасность и системы управления движением поездов» и «Перспективы развития железнодорожных станций и узлов», проведение занятий по которым организовать на базе производственных предприятий транспорта.

ВЫСТУПИЛИ: представители работодателей Рахметжанов А.Е., Айкумбеков М.Н., Масанов А.

Организации заинтересованы в специалистах, имеющих хороший уровень подготовки и знаний в области организации перевозок, движения и эксплуатации транспорта. Вносим предложения о внесении в РУП следующих востребованных дисциплин: Наименование дисциплин для внесения в ОП 6В11326-ОПДЭТ, 6В11367-ОДД, 6В07174-ИТТП, 7М11351/52-ОПДЭТ, 7М11353-ЭЭИВЖТ, 8D11361-ОПДЭТ: «Основы искусственного интеллекта»; «Компьютерное и инженерное моделирование».

ВЫСТУПИЛ: обучающийся Кошербаева С.

Для нашего общего развития и формирования soft-skills считаем необходимым включить в РУП следующие дисциплины: «Основы финансовой грамотности»; «Критическое мышление».

ПОСТАНОВИЛИ:

4.3.1 Информацию принять к сведению;

4.3.2 Учесть предложения и рекомендации работодателей и обучающихся;

4.3.3 Рассмотреть включение в РУП следующие дисциплины:

Наименование дисциплин для внесения в ОП 6В11326-ОПДЭТ, 6В11367-ОДД, 6В07174-ИТТП:

- Основы искусственного интеллекта;
- Компьютерное и инженерное моделирование;
- Основы финансовой грамотности;
- Критическое мышление.

4.3.4 Вынести в модуль Практико-ориентированных дисциплин:

- в ОП 6В11326-ОПДЭТ дисциплины «Транспортная безопасность и системы управления движением поездов» и «Перспективы развития железнодорожных станций и узлов», проведение занятий по которым организовать на базе производственных предприятий транспорта;
- в ОП 6В07174-ИТТТ дисциплину «Интеллектуальные системы обеспечения безопасности движения»;
- в ОП 6В11367-ОДД дисциплины «Моделирование дорожного движения» и «Обследование УДС и параметров транспортного потока».

4.3.5 Утвердить каталоги элективных дисциплин образовательных программ 6В11326-ОПДЭТ, 6В11367-ОДД, 6В07174-ИТТП, 7М11351/52-ОПДЭТ, 7М11353-ЭЭИВЖТ, 8D11361-ОПДЭТ на 2024-2025 учебный год.

Зав. кафедрой «ОПЭТ» **Битилеуова З.К.**

Секретарь **Суйенишова М.Е.**

Академия логистики и транспорта

ВЫПИСКА ИЗ ПРОТОКОЛА № 7

Заседания Комиссии по обеспечению качества – Учебно-методического бюро (КОК УМБ) института «Логистика и управление»

г. Алматы «26» февраля 2024 года

Председатель: Мусаева Г.С.
Секретарь: Урсарова А.К.

Присутствовали: члены КОК-УМБ, председатель КОК-УМБ ИЛУ, директор института, д.т,н., профессор Мусаева Г.С., сениор-лектор кафедры «ЛиМТ», заместитель директора по учебно-методической работе Бадамбаева С.Е., сениор-лектор кафедры «ЛиМТ», заместитель директора по воспитательной работе Алик А., зав.кафедрой «ЛиМТ» ассоциированный профессор Кенжебаева Г.Ж., зав.кафедрой «ОПЭТ», ассоциированный-профессор Биттилеуова З.К.; ассоциированные профессор кафедры «ОПЭТ» Вахитова Л.В.; к.э.н., ассоциированный профессор кафедры «ЛиМТ» Ахметжанова А.Х., PhD, ассистент профессор кафедры «ОПЭТ» Бекмагамбетова Л.К., сениор-лектор «ЛиМТ», секретарь КОК-УМБ ИЛУ Урсарова А.К., сениор-лекторы: Нуржаубаев М.М; Байбусинова М.А,

Представители с производства: Начальник отдела "Управление проектами" ТОО " НИИТК" Суванбаева Ф. Г., Специалист по работе с клиентами по жд перевозкам ТОО «CMA CGM Logistics Central Asia» Коржумбаева С.Т, Директор по коммерциализации ТОО НИЦ «Развитие перевозочного процесса» - Сман А., Начальник отдела диспетчерского управления перевозками ТОО «ТрансКом» - Косыбаев К.К., Специалист-аналитик отдела диспетчерского управления перевозками - Айкумбеков М.Н., Директор департамента по организации перевозок ТОО «КТЖ-Грузовые перевозки» - «Дирекция по организации перевозочного процесса» - Рахметжанов А.Е., Директор департамента по перевозочной деятельности ТОО «Транском» - Жуматаев А.Ж., Начальник станции Балхаш-1 филиала ТОО «КТЖ-Грузовые перевозки» - Карагандинское отделение ГП - Искаков Е.А., Директор научно-исследовательского института по безопасности дорожного движения –Масанов А., Директор автобусного парка -3, г.Алматы – Кундакбаев С.М., Казахстанский дорожный НИИ, -директор департамента стандартизации и информации – Айдарбеков Е.К.

Обучающиеся: студенческий декан ИЛУ Марупжанов И., обучающийся группы МН-Л-23-1 Калтаева Д., обучающийся по ОП 6В11326 – ОПДЭТ Кошербаева С., по ОП 6В11367-ОДД Қарсыбаев А.Б, по ОП 7М11351/52-ОПДЭТ – Асанов А, 7М11353-ЭЭИВЖТ – Матибрахимов А.Ф., по ОП 8D11361-ОПДЭТ – Сагитжанова М.Ж.

ПОВЕСТКА ДНЯ:

5. Разное

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

ВЫСТУПИЛ(а): зав. кафедрой «ОПЭТ» Битилеуова З.К. представил на рассмотрение КЭД, РУП бакалавриата, магистратуры и докторантуры.

На кафедре «ОПЭТ» было проведено заседание с привлечением представителей работодателей и обучающихся по обсуждению структуры и содержанию образовательных программ бакалавриата, магистратуры и докторантуры 6В11326-Организация перевозок, движения и эксплуатация транспорта; 6В11367-Организация дорожного движения; 6В07174-Интеллектуальные технологии транспортных процессов; 7М11351 (7М11352)- Организация перевозок, движения и эксплуатация транспорта; 7М11353-Экономика, экология и инфраструктура

на высокоскоростном железнодорожном транспорте; 8D11361- Организация перевозок, движения и эксплуатация транспорта.

Представителями работодателей и обучающимися были предложены ряд новых актуальных дисциплин, которые кафедра одобрила и включила в 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 **Мусаева Г.С.**

Секретарь **Урсарова А.К.**

14. APPROVAL SHEET

№	Full name	Place of work/study	Position	Date of approval	Signature

15. CHANGE REGISTRATION SHEET

Номер издания	Дата введения	Изменения	Подпись
1	2	3	4