

**JOINT STOSC COMPANY «ALT University»
named after MUKHAMEDZHAN TYNYSHBAYEV**



EDUCATIONAL PROGRAM

Name: 7M07170 TRANSPORT STRUCTURES (PROFILE)

Level of training: Master

Code and classification of areas of study: 7M071 Engineering and engineering affairs

Code and group of educational programs: M310 – Transport facilities

Date of registration in the Register: 10.06.2025

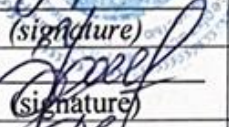
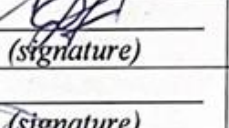
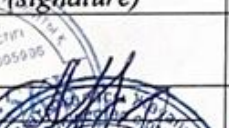
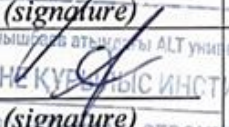
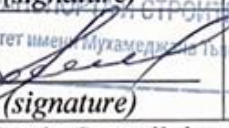
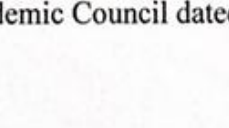
Registration number: 7M07100472

Almaty 2025 y.

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

1 DEVELOPED:		
<u>Associate Professor</u> (job title)	 (signature)	<u>Tursumbekova K.S.</u> (FULL NAME)
<u>Apple Build Project LLP</u> <u>ch.engineer</u> (job title)	 (signature)	<u>Kurmanbekov J.K.</u> (FULL NAME)
<u>Associate Professor ALT</u> (job title)	 (signature)	<u>Uteshbaeva A.A.</u> (FULL NAME)
<u>Head of the Department of "ASI"</u> (job title)	 (signature)	<u>Kulmanov K.S.</u> (FULL NAME)
<u>Associate Professor ALT</u> (job title)	 (signature)	<u>Dyusengalieva T.M.</u> (FULL NAME)
<u>Student gr. ADA-22-3</u> (job title)	 (signature)	<u>Koishibai A.A.</u> (FULL NAME)
2 EXPERTS:		
<u>Saulet-SKB LLP, Direktor</u> (job title)	 (signature)	<u>Oshanov A.E.</u> (FULL NAME)
<u>«Kazakh Promtransportprojekti»</u> <u>LLP ch.engineer</u> (job title)	 (signature)	<u>Musaev M.T.</u> (FULL NAME)
3 REVIEWER:		
<u>Associate professor of "TSiU"</u> <u>KazADI named after</u> <u>L.Goncharov</u> (job title)	 (signature)	<u>Abiev B.A.</u> (FULL NAME)
4 REVIEWED AND RECOMMENDED:		
<u>AC meeting (department) «ASI»</u> <u>Protocol №7, «18» 02.2025z</u>	 (signature)	<u>Kulmanov K.S.</u> (FULL NAME)
<u>UMB meeting «TaC»</u> <u>Protocol №8, «17»03.2025z</u>	 (signature)	<u>Abdreshov SH.A.</u> (FULL NAME)
<u>EMC meeting</u> <u>Protocol №4, «20»03.2025z</u>	 (signature)	<u>Zharmagambetova M.S.</u> (FULL NAME)

5 APPROVED by the decision of the Academic Council dated « 27 » 03 2025г. №8
6 UPDATED

2. NORMATIVE 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 of the Republican Tripartite Commission on Social Partnership and Regulation of Social and Labor Relations.

3. The sectoral qualifications framework for the "highways" industry was approved by the Protocol Decision of the Sectoral Council for Professional Qualifications in the Field of Highways No. 3 dated September 20, 2024

4. The State mandatory Standard of Higher and Postgraduate Education ((Order of the Minister of Science and Higher Education of the Republic of Kazakhstan dated July 20, 2022 No. 2 (as amended by Order of the Acting Minister of Science and Higher Education of the Republic of Kazakhstan dated 04/22/2025 No. 200)).

5. Qualification directory of positions of managers, specialists and other employees, approved by 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 organizing 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 04/20/2011. (as amended by the Order of the Minister of Science and Higher Education of the Republic of Kazakhstan dated 03/26/2025 No. 134).

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 for including and excluding educational programs in the Register of Educational Programs of Higher and Postgraduate Education, approved by 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. RI-ALT-33 "Regulation on the procedure for developing an educational program for higher and postgraduate education".

10. Atlas of new professions: "Technologist of road construction from recycled plastic".

3. PASSPORT OF THE EDUCATIONAL PROGRAM

№	Fieldname	Note
1	Registrationnumber	7M07100472
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 affairs
4	Code and group of the educational program (OP)	B310 – Transport facilities
5	Name of the educational program (OP)	7M07170 – Transport structures (profile)
6	Type of educational program (EP)	New EP
7	The purpose of the educational program (OP)	The purpose of the educational program is to train highly qualified specialists with knowledge and skills in the field of transport construction, who are able to solve complex engineering problems and contribute to the development of the country's transport infrastructure.
8	Level according to the International Standard Classification of Education (ISCED)	7 - Master
9	National Qualification Framework (NQF) level	7 - Master
10	Level according to the Industry Qualification Framework (ORC)	7 - Master
11	Distinctive features of the educational program (EP)	New
	Partner university, joint educational program (SOP)	
	Partner university, double-degree educational program (DDOP)	
12	Formoftraining	Online, offline
13	Languageofinstruction	Kazakh, Russian, English
14	Volumeofloans	60
15	Academicdegreeawarded	Master
16	Availability of an appendix to the license for the direction of training	KZ87LAA00036465
17	Availability of educational program accreditation (OP)	
	Name of the accreditation body	
	Validityperiodofaccreditation	

4. THE GRADUATE'S COMPETENCE MODEL

Objectives of the educational program

Assistance in the formation of a graduate's ability:

1. demonstrate the developing knowledge and understanding gained at the higher education level, which are the basis or opportunity for the original development or application of ideas.;
2. Apply knowledge, understanding, and the ability to solve problems in new or unfamiliar situations in the context and framework of broader (or interdisciplinary) fields related to the field under study.;
3. Integrate knowledge, cope with complex situations, and make judgments based on incomplete or limited information, taking into account the ethical and social responsibility for applying these judgments and knowledge.;
4. clearly and clearly state their conclusions, knowledge and their justification to specialists and non-specialists.

Assistance in the formation of graduate readiness:

1. to develop design documentation for the creation and modernization of railways and highways, transport and oil and gas facilities;
2. to carry out design work on the creation and modernization of the transport complex of the Republic of Kazakhstan;
3. develop technical documentation and methodological materials, proposals and measures for the creation and modernization of the transport complex;
4. to carry out a feasibility study and a comprehensive justification of the decisions taken and implemented in the field of operation and repair of railways, bridges, tunnels and subways;
5. apply the results in practice, show a desire for self-development, improve their skills and professional skills;
6. ensure the economical and safe use of natural resources, energy and materials during the operation and repair of railways, bridges, tunnels and subways.

Field of professional activity: Engineering, manufacturing and construction industries:

Learning outcomes

- P01- Analyze scientific articles, research and business literature in a foreign language.
- P02- Understand the psychological aspects of management to create a healthy working environment, form effective teams and manage them.
- P03- Manage resources, projects, and construction processes, including the sequence of work, assignment of tasks to teams, and quality control.
- P04- Analyze various approaches and methodologies in the field of transport construction to select the most effective solutions.
- P05- Apply theoretical knowledge and practical skills to solve complex problems in your field and modern methods and technologies for data analysis and development of innovative solutions.
- P06- To implement automated systems for managing construction processes, taking into account the use of AI and automation.
- P07- Apply the principles of lean manufacturing to increase the competitiveness and efficiency of organizations, having the ability to analyze productivity and process efficiency using key indicators
- P08- Apply the finite element method to analyze and design various structures and systems in transport construction, such as bridges, roads, tunnels and other infrastructure facilities.

Objects of professional activity:

The field of professional activity of graduates includes the fields of science and technology related to the design, construction, operation, reconstruction and modernization of transport facilities, railway and road transport, as well as engineering of transport infrastructure.

1. state and local executive authorities in the field of railway and motor transport, as well as engineering of transport infrastructure and their regional divisions;

2. organizations and enterprises of the transport industry engaged in the management, operation and maintenance of railways, highways, bridges, tunnels, subways and other transport infrastructure facilities;

3. design, construction, research and production organizations working in the field of materials science technologies, processing and construction processes in the creation and modernization of transport facilities.

Types of professional activity:

1. production and technological;

2. organizational and managerial;

3. Experimental research;

4. settlement and design.

Functions of professional activity:

1. managerial activity involving the development of a strategy for the functioning and development of organizations in the transport industry, as well as the organization of conditions for their effective work;

2. preparation and modernization of transport infrastructure facilities, backbone networks and traffic control systems;

3. analysis and development of solutions for the improvement of technological processes, the introduction of innovative methods and modern engineering solutions;

4. carrying out research and design work aimed at improving the efficiency of operation and safety of transport facilities.

List of specialist positions:

1. the first head of a production organization (enterprise);

2. Deputy head of the production organization (enterprise);

3. Chief engineer of the production organization (enterprise);

4. Head of the structural unit of the production organization (enterprise);

5. Deputy head of the structural unit of the production organization (enterprise);

6. Engineer, design engineer, manager, head of laboratory.

Professional certificates obtained at the end of the training: Not provided.

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

The educational program of the specialized master's degree includes one type of practice: industrial practice.

Final certification

The objectives of the thesis are to identify the degree of assimilation by the bachelor of the content of the educational program, to check his readiness for independent activity in the direction of the educational program, to consolidate and deepen practical work skills. A comprehensive exam is also provided.

Experimental research work of a Master's student (EIRM)

The planning of the master's student's experimental research work (EIRM) in weeks is determined based on the standard time of the master's student's work during the academic week.

The number of credits allocated for the implementation of the EIRM in a specific academic period is determined by the working curriculum of the specialized educational program.

The EIRM should:

- correspond to the profile of the master's degree program, within which the master's project is being implemented and defended;

- It should be based on modern achievements of science, technology and production, contain specific practical recommendations and independent solutions to scientific, technical and managerial tasks.;

- performed using advanced information technologies;

- include experimental research (methodological, analytical or practical) sections confirming the main provisions of the master's project.

Organization and conduct of EIRM

Within the framework of the EIRM, the individual master's work plan provides for mandatory scientific internships in scientific organizations and (or) organizations of relevant industries or fields of activity to familiarize themselves with innovative technologies and modern types of production.

EIRM is planned in parallel with other types of educational work or in a separate period of the educational process.

The results of the experimental research work are drawn up by the graduate student in the form of a report on the results of each period of its completion.

The final result of the implementation of the EIRM is a master's project.

The purpose of the AIRM

Obtaining new scientific and practical results that are important for the development of theory and practice in the relevant subject area, as well as mastering theoretical and experimental methods for studying objects (processes, phenomena, structures, projects) in this field.

EIRM tasks

- formation of the master's student's skills in theoretical and practical experimental research work;

- development of creative thinking, independence, deepening and consolidation of acquired theoretical and practical knowledge;

- identification of the most gifted and talented undergraduates, using their scientific and intellectual potential to solve urgent problems of science and technology;

- formation of the undergraduate student's interest in research activities, training in methods and methods of independent solution of applied and research tasks.

The purpose of the scientific internship

The scientific internship is conducted for the purpose of:

- completing the tasks of the master's thesis;
- familiarization with innovative technologies and new types of production;
- studying the latest theoretical, methodological and technological achievements of Russian and foreign science;
- familiarization with modern methods of scientific research, processing and interpretation of experimental data;
- consolidation of theoretical knowledge gained in the learning process, as well as the acquisition of practical skills, competencies and professional experience in the field of study;
- mastering advanced domestic and foreign experience.

Requirements for the implementation of the EIRM**The experimental research work of a master's student must:**

- correspond to the profile of the master's degree program in which the master's project is being implemented and defended;
- It should be based on modern achievements of science, technology and production and contain specific practical recommendations, as well as independent solutions to scientific and managerial tasks.;
- performed using advanced information technologies;
- include experimental research (methodological, analytical, practical) sections reflecting the main protected provisions.

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

№	Name of discipline	Number of credits	LO1	LO2	LO3	LO4	LO5	LO6	LO7	LO8
1	2	3	4	5	6	7	8	9	10	11
1.	Foreign language (professional)	2	+							
2.	Management	2		+	+					
3.	Psychology of management	2		+	+					
4.	Lean manufacturing	4			+				+	
5.	SMART technologies in transport	4	+							
6.	The finite element method in transport construction tasks	5				+				+
7.	Methodology of scientific research	5				+				
8.	Innovative technologies in the construction of highways and airfields	5					+		+	
9.	The use of artificial intelligence and automation in the construction of highways and airfields	5					+	+		
10.	Sustainable construction and smart roads	5					+	+		
11.	Digitalization of the transport system infrastructure	5					+	+		
12.	Preparation and defense	8	+	+	+	+	+	+	+	+

6. STRUCTURE OF THE BACHELOR'S DEGREE PROGRAM

№	Name of discipline cycles	Overall labor intensity	
		wakademi- cheskihchasakh	in a cademic credits
1.	Theoretical training	1170	39
1.1	Cycle of basic disciplines (DB)	300	10
1)	University component (BK):	180	6
	Management	60	2
	Foreign language (professional)	60	2
	Psychology of management	60	2
2)	Elective component (CV)	120	4
1.2	Cycle of core disciplines (PD)	870	29
1)	University component	300	10
2)	Component of choice	570	19
7.	Experimental research		
1)	work of a graduate student	380	13
3	Experimental research work		
4	of a master's student, including an internship and completion of a master's thesis	240	8
1)	Additional types of education (DVO)	240	8
	Final certification (IA)	1800	60

7. CURRICULUM FOR THE ENTIRE PERIOD OF STUDY

JSC "ALT University named after Mukhamedzhan Tynyshpayev"

CURRICULUM

Form of study: full-time

Duration of training: 1 year

Admission: 2025

Direction of training (profile name):
7M071-Engineering and Engineering

Group of educational programs:
M310-Transport structures

Name of the educational program:
7M07170-Transport facilities

Degree: Master of Engineering and Technology

APPROVED
By the decision of the Academic Council
JSC "ALT University named after M. Tynyshpayev"
Protocol No. of March 27, 2025
Chairman of the Academic Council
M. S. Zhannagandetova

No	Discipline code	Name of cycles and disciplines	Total labor capacity		Control form, semester		Amount of training load, hours							Distribution by semester		Securing a position at department
			in academic hours	in academic credits	Exam	KP (KR)	Total hours	Contact details				CP	1st course			
								lectures	practical features	laboratory data	WST		1 course	2 course		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
THEORETICAL TRAINING																
1.1. CYCLE OF BASIC DISCIPLINES (DB):																
1.1.1.	23-0-M-VK-Meng	Management	60	2	1		60	15				15	30	2		TUB
1.1.2.	23-0-M-VK-lye(P)	Foreign language (professional)	60	2	1		60		15			15	30	2		LE
1.1.3.	23-0-M-VK-FU	Psychology of management	60	2	1		60	15				15	30	2		SRSFV
2. Component of your choice:			120	4	1	0	120	15	15	0	15	75	4	0		
1.1.4.	23-0-M-KV-BP	Lean manufacturing	120	4	1		120	15	15		15	75	4			PS
	23-0-M-KV-SMARTTT	SMART technologies in transport														
TOTAL by DB cycle:			300	10	4		300	45	30	0	60	165	10	0		
1.2. CYCLE OF PROFILE DISCIPLINES (PD):																
1.2.1.	25-0-M-KV-MKZTS	The finite element method in transport construction tasks	100	5	1		100	15	15		15	105	5			VEHICLE TYPE
1.2.2.	25-0-M-KV-MN	Methodology of scientific research	100	5	1		100	15	15		15	105	5			OY
2. Component of your choice:			670	19	3		670	30	30	0	30	210	10	9		
1.2.3.	25-0-M-KV-PIASADA	The use of artificial intelligence and automation in the construction of highways and airfields	150	5	1		150	15	15		15	105	5			ASI
	25-0-M-KV-QSUD	Sustainable construction and smart roads														
1.2.4.	25-0-M-KV-PIASADU	Innovative technologies in the construction of highways and airfields	150	5	1		150	15	15		15	105	5			ASI, VEHICLE TYPE
	25-0-M-KV-TaITS	Digitalization of the transport system infrastructure														
1.2.5.	25-0-M-KV-PPh	Production practice	270	9	2		270							9		ASI
TOTAL BY PD:			870	29	6	0	870	60	60	0	60	420	20	9		
TOTAL THEORETICAL TRAINING (TD):			1170	39	9	0	1170	105	90	0	120	585	30	9		
1.2	Experimental research work of a Master's student (EIRM):		390	13			390						0	13		
1.3	25-0-M-VK-EIRD	Experimental and research work of a master's student, including passing an internship and completing a master's project	390	13	2		390							13		ASI
3. Additional types of training (DVE):																
4. Final certification (IA):			240	8			240							8		
1.1	25-0-M-VK-QZMP	Design and defense of a master's project	240	8	2		240							8		ASI
TOTAL FOR THE ENTIRE TRAINING PERIOD:			1800	60	9	2	1800	105	90	0	120	585	30	30		

AGREED:

Acting Vice-Rector for AD  Kodzhabergenova A. K.

DEVELOPED:

Director of the Institute "T&C"  Abdurashov Sh. A.

Head of the Department "AC"  Kulmanov K. S.

8.CATALOG OF DISCIPLINES OF THE UNIVERSITY COMPONENT

AGREED
Chief Engineer of the project,
of LLP «Kazakh Promtransprojekt»
Musaev M.T.
2025 y.



APPROVING
Director of the Institute
«Transport and Construction»
Abdreshov S.A.
2025 y.

CATALOG OF DISCIPLINES OF THE UNIVERSITY COMPONENT EDUCATIONAL PROGRAM 7M07170 – Transport structures (profile)

Education level: Master

Duration: 1 year

Admission year: 2025 y.

№	Cycle	Component	Name of the discipline	Total labor intensity		Term	Learning outcomes	Brief description of the discipline	Prerequisites	Post-requirements
				in academic hours	in academic loads					
1	2	3	4	5	6	7	8	9	10	11
1	BD	UC	Management	60	2	1	LO1	Forms knowledge about the organization as an object of management, considers situational and process approaches in management, engineering and reengineering of business processes, explores the theory and practice of management, explores the role functions of the manager and subordinates, studies ways of planning the strategy of management activities, stimulating performers to high-performance work, organizing effective control, etc., gives practical skills in developing style management and management decision-making tactics.	fundamentals of Economics and entrepreneurship	Final certification
2	BD	UC	Foreign language (professional)	60	2	1	LO2	Mastery of professional English at an advanced level (for non-linguistic areas), grammatical characteristics of scientific style in its oral and written forms, professional oral communication in monological and dialogical 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 the results of scientific research on in a foreign language.	Discipline cycle database undergraduate	Final certification

3	BD	UC	Psychology of management	60	2	1	LO1	It is 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 the methods of studying important socio-psychological characteristics of the individual and the team, professional, interpersonal and intrapersonal problems by means of management psychology.	Disciplines of the bachelor's DB cycle	Final certification
4	PD	UC	The finite element method in transport construction tasks	150	5	1	LO3	The finite element method (FEM) in transport construction is used for the analysis and design of structures such as bridges and roads. It allows you to model complex mechanical processes, evaluate the strength of materials, and predict the behavior of structures under load. The FEM contributes to optimizing design solutions and improving the safety of transport infrastructure.	Elasticity and plasticity. Mechanics of an elastic deformable solid	Final certification
5	PD	UC	Methodology of scientific research	150	5	1	LO9	The discipline studies the system of principles and methods used to plan, conduct and analyze research. It includes choosing an approach, formulating hypotheses, collecting data and interpreting them. The methodology ensures the reliability and reproducibility of results, allowing researchers to objectively evaluate and justify their findings.	Within the framework of the Bachelor	Final certification
6	PD	UC	Production practice	270	9	2	LO6 LO7 LO8	Consolidation of theoretical knowledge acquired in the course of training; acquisition of skills in the practical use of professional knowledge acquired during theoretical training; training in the skills of solving practical and managerial tasks; familiarization with the specifics of a bachelor's professional activity in a particular industry; formation of a professional position of a specialist, style of behavior, mastering professional ethics	Diagnostics of transport infrastructure facilities	Experimental research work of a master's student
7	PD	UC	Experimental-research work of a graduate student	390	13	1,2	LO4 LO6 LO7	Well-developed professional and managerial competencies, readiness to independently perform professional tasks and compliance of his training with the requirements of the master's degree program	Sustainability of transport infrastructure facilities	Experimental research work of a master's student
8	PD	UC	Final certification	240	8	2	LO4 LO6 LO7	The objectives of the thesis are to identify the degree of assimilation of the content of the educational program, to check its readiness for independent activity in the direction of the educational program, to	Monitoring of the technical condition of transport	Experimental research work of a master's student

							LO8	consolidate and deepen practical work skills. It also provides for passing a comprehensive exam.	infrastructure facilities	
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Head of the department «Architectural and construction Engineering»

Kulmanov K.S.

9. CATALOG OF DISCIPLINES OF THE COMPONENT BY CHOICE

AGREED
Chief Engineer of the project,
of LLP «Kazakh Promtransprojekt»
Musaev M.T.
2025 y.

КАЗАХСКИЙ
ПРОМТРАНСПРОЕКТ

APPROVING
Director of the Institute
«Transport and Construction»
Abdreshov S.A.
2025 y.

МҮХАММЕТЖАН Т. АБДРЕШОВ
КӨЛІК АРНАЛАР ЖӘНЕ
ИНСТИТУТ
ИНСТИТУТ ТРАНСПОРТА И СТРОИТЕЛЬСТВА
АО «АТ УИ»

THE CATALOG OF DISCIPLINES OF THE COMPONENT OF CHOICE

EDUCATIONAL PROGRAM 7M07170 – Transport structures (profile)

Education level: Master

Duration: 1 year

Admission year: 2025 y.

№	Cycle	Component	Name of the discipline	Total labor intensity		Term	Learning outcomes	Brief description of the discipline	Prerequisites	Post-requirements
				in academic hours	in academic loads					
1	2	3	4	5	6	7	8	9	10	11
1	BD	EC	Lean manufacturing	120	4	1	LO3	Methods of minimizing losses and increasing production efficiency are being mastered. Managerial competencies are being developed in process analysis, decision-making, and the implementation of lean approaches. The ability to develop productivity improvement projects based on the rational use of resources is being formed. The principles of lean thinking focused on sustainable development, automation and improvement of all levels of production and management activities are studied.	Ecology and safety lifeline safety	Final certification
2	BD	EC	SMART technologies in transport				LO4	The discipline reveals intelligent technologies of digital monitoring, automation and management of transport infrastructure facilities based on modern IT solutions. Develops competencies in the application of the Internet of Things, predictive analytics, artificial intelligence systems and digital twins to improve operational safety, reliability and efficiency. The methods of building SMART systems, digital modeling, data analysis and forecasting are being	Information and communication technologies	Final certification

								mastered to ensure the sustainable development of transport.		
3	PD	EC	The use of artificial intelligence and automation in the construction of highways and airfields	150	5	1	LO9	The discipline studies the implementation of artificial intelligence and automation in the design, construction and maintenance of highways and airfields. Machine learning algorithms, construction process management systems, and resource optimization are considered. The goal is to improve the efficiency, safety and quality of infrastructure projects while minimizing costs and time to complete the work.	Within the framework of the Bachelor's degree program	Final certification
4	PD	EC	Sustainable construction and smart roads				LO8	Sustainable construction and smart roads focus on developing environmentally friendly, energy efficient and safe transportation systems. The use of innovative technologies such as sensors and IT solutions makes it possible to optimize traffic management, minimize the impact on nature and improve the quality of road infrastructure, ensuring comfort and safety for users.	Within the framework of the Bachelor's degree program	Research work, final certification
5	PD	EC	Innovative technologies in the construction of highways and airfields	150	5	1	LO10	Innovative technologies in the construction of highways and airfields include the use of modern materials, computer-aided design systems, 3D printing, drones for monitoring and analysis, and intelligent transport systems. These technologies improve the efficiency, safety and sustainability of infrastructure while minimizing costs and environmental impacts.	As part of the Bachelor's degree program	Final certification
6	PD	EC	Digitalization of the transport system infrastructure				LO10	Digitalization of the transport system infrastructure includes the introduction of modern information technologies to optimize the design, construction and operation of facilities. This ensures an increase in the efficiency, safety and sustainability of transport networks. The use of real-time data, process automation, and integration with smart management systems contribute to improved service quality and lower costs.	In the framework of the Bachelor's degree program	Final certification

Head of the department «Architectural and construction Engineering»

Kulmanov K.S.

10. EXPERT OPINIONS

10. EXPERT OPINIONS

on the educational program 7M07170 – Transport structures (profile)

The implementation of the educational program «7M07170 – Transport structures (profile)» is carried out through a sequence of subjects studied, with the establishment of specific tasks and target indicators. Interdisciplinary interaction is clearly traced, which consists in a complex relationship 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 defines a list of all academic disciplines of the mandatory 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 environmental situation and ensure safe working conditions at the enterprises of LLP «Saulat-SKB».

Educational trajectories have been developed in accordance with the demands of the transport and communication industry.

The purpose of the educational program is relevant, formulated quite concisely 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 labor functions in competencies and learning outcomes, indicates the types of relations with employers: conducting guest lectures, lectures by leading top managers, the presence of branches of departments based on organizations.

Thus, the educational program «7M07170 – Transport structures (profile)» submitted for examination in the field of personnel training «7M071 Engineering and Engineering affairs» fully complies with the requirements of the State Educational Standard, has a clear sequence in development, meets modern labor market requirements, professional standards and can be implemented for training personnel in the educational program «7M07170 – Transport structures (profile)» in the direction.

Expert,
Director of LLP «Saulat-SKB»



A.E. Oshanov

10. EXPERT OPINIONS

on the educational program 7M07170 – Transport structures (profile)

The implementation of the educational program «7M07170 – Transport structures (profile)» is carried out through a sequence of subjects studied, with the establishment of specific tasks and target indicators. Interdisciplinary interaction is clearly traced, which consists in a complex relationship 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 defines a list of all academic disciplines of the mandatory 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 environmental situation and ensure safe working conditions at the enterprises of LLP «Kazakh Promtransportproekt».

Educational trajectories have been developed in accordance with the demands of the transport and communication industry.

The purpose of the educational program is relevant, formulated quite concisely 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 labor functions in competencies and learning outcomes, indicates the types of relations with employers: conducting guest lectures, lectures by leading top managers, the presence of branches of departments based on organizations.

Thus, the educational program «7M07170 – Transport structures (profile)» submitted for examination in the field of personnel training «7M071 Engineering and Engineering affairs» fully complies with the requirements of the State Educational Standard, has a clear sequence in development, meets modern labor market requirements, professional standards and can be implemented for training personnel in the educational program «7M07170 – Transport structures (profile)» in the direction.

**Expert, Chief Engineer of
LLP «Kazakh Promtransportproject»**



Musaev M.T.

11. EXPERT CONCLUSIONS

Review

of the educational program in the field of training "7M07170-Transport structures (profile)"

The Bachelor's degree program "7M07170-Transport structures (profile)" contains the following information: graduate's qualifications, form and duration of study, direction and characteristics of graduate activities, a complete list of competencies that a graduate should possess as a result of mastering this educational program.

The disciplines of the curriculum according to the reviewed educational program form the entire 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 mandatory 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 subjects and the Catalog of the intra-university component fully reflect the continuity of the disciplines Underground and aboveground tracks: innovations in bridge construction and tunneling; Automation and mechanization in urban road construction; Safety and innovation in urban infrastructure; Quality control of road construction works.

The sequence of studying the disciplines has been observed, and the disciplines necessary for production and 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 competence of the graduate model.

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

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

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 training "7M07170-Transport

structures (profile)".

The reviewer

Assoc.Professor of the department of "TSiU"
KazADI named after L.Goncharov



Abiev B.A.

12. LETTERS OF RECOMMENDATION

Dear Meruert Sovetovna

The management of KazdorNII JSC, represented by Yerembayev U.M., got acquainted with the content of the educational program "7M07170-Transport structures (profile)" and made the following recommendations:

- to include the following disciplines in the content of the educational program: roads,

- to increase the number of hours allocated for conducting part of laboratory and practical classes at employers' bases in order to form certain types of professional competencies;

- to update the content of educational programs by including in the cycle of basic and profile modules disciplines reflecting modern innovative technologies in the transport and communication sphere. It is proposed to include the following disciplines: Underground and aboveground tracks: innovations in bridge construction and tunneling; Automation and mechanization in urban road construction; Safety and innovation in urban infrastructure; Quality control of road construction works.

- increase the number of hours allocated for conducting production practices; enable disciplines:

- Underground and aboveground tracks: innovations in bridge construction and tunneling";

- Automation and mechanization in the construction of urban roads;

- Safety and innovation in urban infrastructure;

- Quality control of road construction works.

**Director of the Almaty branch
of KazdorNII JSC**



Yerembayev U.M.

13. MINUTES OF REVIEW AND APPROVAL

13. PROTOCOLS OF REVIEW AND APPROVAL

Academy of Logistics and Transport

PROTOCOL №7

Meetings

Des akademischen Ausschusses für das Bildungsprogramm und der führenden
Lehrer des Lehrstuhls "Architektonisch-Bauingenieurwesen»

city of Almaty

«18» 02 2025 year

Chairman: Kulmanov K.S.

Secretary: Begezhanova G.S.

Attended by: Head of the Department of "ASI" Ph.D., Assoc. Professor Kulmanov K.S., Candidate of Technical Sciences, associate professors: Bondar I.S., Espayeva G.A., Tursumbekova H.S., Candidate of Technical Sciences, assistant professors: Dyusengalieva T.M., Uteshbaeva A.A., Dzhaksenbaev E.K., Murzalina G.B., Dzhumagaliev T.K., senior lecturers; Zhigitbaeva B.E., Suleimenov I.T., Kalpenova Z.D., Karimova M.B.

Representatives from the production: Chief Engineer of LLP «Apple Build Project» Kurmanbekova Zh.K., Director of LLP «Saulat-SKB» Oshanov A.E., Chief Engineer of LLP «Kazakh Promtransport» Musaev M.T., Dezi Invest LLP Nurmukanov A.K., Assoc. Professor of TSU KazADI named after L.B. Goncharov Abiev B.A.

AGENDA:

1. Consideration of the graduate's competence model
 2. Consideration of the possibility of including disciplines in QED and RUP
- On the first question

MADE A SPEECH:

The head of the department, K.S. Kulmanov, proposed to consider the graduate's competence model at 3 levels of education: bachelor's degree, master's degree, doctoral degree.

The graduate's competence model includes the following parts:

- The purpose and objectives of the educational program;
- Learning outcomes;
- Area, objects, types and functions of professional activity;
- The list of positions in the educational program;
- Professional certificates obtained upon graduation;
- Requirements for the previous level of education.

PERFORMED:

Representative of employers: Musaev M.T. who proposed, due to the specifics of their organization, to reflect the following in the objects of professional activity: Modern innovative technologies in the transport and communication sphere

THE SPEAKER was:

Member of the department Tursumbekova H.S. who proposed to approve

After reviewing the graduate's competence model, it was proposed to approve this Model for 3 levels of education.

THEY DECIDED:

- provide a graduate's competence model for 3 levels of education: Bachelor's degree, Master's degree, doctoral degree for consideration and approval by the Council of the Institute of Transport and Construction.

On the second question

MADE BY: Head of the department K.S. Kulmanov with a proposal to hear representatives of employers and trainees on the inclusion of new disciplines in the CAD and RUP of admission in 2025.

MADE BY: representative of employers of «Apple Build Project» LLP, chief engineer Kurmanbekov Zh.K.

Organizations are interested in specialists with a good level of training and knowledge in the field of design and construction of highways. We are making proposals to include the following demanded disciplines in the RUP: Underground and aboveground tracks: innovations in bridge construction and tunneling; Automation and machenization in urban road construction; Safety and innovation in urban infostructure; Quality control of road construction works.

THEY DECIDED:

1. Take the information into consideration;
2. Take into account the suggestions and recommendations of employers and students;
3. Consider the inclusion in the RUP of the following disciplines: Underground and aboveground tracks: innovations in bridge construction and tunneling; Automation and machenization in urban road construction; Safety and innovation in urban infostructure; Quality control of road construction works.

Chairman:

Secretary:

The image shows two handwritten signatures in blue ink. The top signature is more stylized and appears to be 'Kulmanov K.S.', while the bottom signature is simpler and appears to be 'Begezhanova G.S.'.

Kulmanov K.S.

Begezhanova G.S.

**MINISTRY OF EDUCATION AND SCIENCE OF THE REPUBLIC OF KAZAKHSTAN
JSC "ALT UNIVERSITY NAMED AFTER MUKHAMEDZHAN TYNYSHPAYEV"
INSTITUTE OF TRANSPORT AND CONSTRUCTION**

**EXTRACT
from the Protocol № 8
of the extraordinary meeting of the Educational and Methodological Bureau (MDB)
of the Institute of Transport and Construction
in Almaty 17 March 2025 y.**

Chairman: Abdreshov S.A.

Secretary: Murzalina G.B.

Were present: UMB members, members of the Academic Committee, Representatives from the production: Chief Engineer of LLP «Apple Build Project» Kurmanbekova Zh.K., Director of LLP «Saulat-SKB» Oshanov A.E., Chief Engineer of LLP «Kazakh Promtransproekt» Musaev M.T., Dezi Invest LLP Nurmukanov A.K., Assoc. Professor of TSiU KazADI named after L.B. Goncharov Abiev B.A.

AGENDA:

1. Discussion of new educational programs for the 2025-26 academic year.

On the issue

WE LISTENED TO: the director of ITiS, Sh.A. Abdreshov, who proposed to consider the following sections of educational programs for admission in 2025: the graduate's competence model and educational program passports, as well as work curricula, catalogs of the university component (CVK) and catalogs of elective disciplines (CED).

PERFORMED:

1) The head of the department, K.S. Kulmanov, who presented for consideration the sections of the new educational program 7M07170 – Transport structures (profile) for admission in 2025: the graduate's competence model, the passport of the educational program, as well as the working curriculum, the catalog of the university component (CVK) and the catalog of elective disciplines (CED).

In connection with the opening of a new group of educational programs 7M071 – Engineering and engineering affairs, construction work and civil engineering, the materials submitted for consideration were developed. A meeting of the Academic Committee on Educational Programs and leading teachers of the department was held at the Department of Architectural and Construction Engineering with the involvement of representatives of employers and students to discuss the structure and content of the new educational program. Following the discussion, a positive decision was made to approve them.

The presented materials were developed with the participation of employers, students and graduates, taking into account the requirements of regulatory legal acts. The working curriculum and CED for admission in 2025 have been drawn up and agreed with employers.

THEY DECIDED:

1. To approve the presented new educational program 7M07170 – Transport structures (profile) for admission in 2025, including the Graduate's Competence Model, QED, QVC, work curriculum and educational program passport.

2. Submit these documents for consideration and approval by the Academic Council of the University.

**Chairman of UDB ITiS
Secretary of UDB ITiS**



**Abdreshov S.A.
Murzalina G.B.**

[illegible]

15. CHANGES REGISTRATION SHEET

№	Section, paragra ph of the docume nt	Type of change (replace, cancel, add)	Number and date of notification	Change made	
				Date	Surname and initials, signature, position