T.K. Basenov Institute of Architecture and Construction
Department of Construction and Building Materials

EDUCATIONAL PROGRAM
7M07321 "Transport Construction"
Master of Technical Sciences
the cipher and the name of the educational program

Code and classification of the field of education: 7M07 Engineering, manufacturing and construction industries
Code and classification of training areas: 7M073 Architecture and construction
Group of educational programs: M126 Transport construction
NRK Level: 7
ORC Level: 7
Duration of training: 1 year
Volume of credits: 60

Almaty 2023

satpayev university

The educational program 7M07321 "Transport construction" was approved at a meeting of the Academic Council of KazNTU named after K.I.Satpayev.

Protocol No. 3 of "27" ___10___ 2022

Considered and recommended for approval at a meeting of the Educational and Methodological Council of KazNITU named after. K.I. Satpaeva.

Protocol No. 2 of "21" ___10___ 2022

The educational program 7M07321 "Transport construction" was developed by the academic committee in the direction of "Architecture and Construction"

Full name	Academic degree/ academic title	Post	Place of work	Signature
Chairman of the Academic Committee:				
Akhmetov Daniyar Akbulatovich	candidate of technical sciences	Head of Department, associate Professor	JSC "Kazakh National Research Technical University named after K.I. Satpayev", mobile phone: +77081240298	
Teaching staff:				
Uskembayeva Bagdat Oralbekovna	Candidate of Technical Sciences	Associate Professor	NAO "Kazakh National Research Technical University named after K.I.Satpayev", mobile phone: +77479345027	
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Kistaubayev Saken Bakytzhanovich	Master of Engineering	PhD student	NJSC "Kazakh National Research Technical University named after K.I. Satpayev", mobile phone: +77789540134	
Employers:				
Nusupov Dzhetybay Kozhabekovich	candidate of technical sciences	Head of Geo Track LLP	GEOTRACK LLP, mobile phone: +77017460487, work phone: +77272919496, +77272784371	
Students				
Zhumamuratov Manarbek		2nd year Master's student	NAO "Kazakh National Research Technical University named after K.I.Satpayev", mobile phone: 2nd year Master's student +770563100 24	

F KazNITU 703-05 Educational program

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1. Description of the educational program

Field of professional activity: Railway transport, transport construction.

Objects of professional activity:

– Local executive authorities in the field of railway transport and their regional structures;

– Organizations and enterprises of the transport industry in the field of management, operation, maintenance of railway tracks, urban rail transport and subways, as well as industrial transport;

– Organizations and enterprises of the transport industry in the field of technologies of material-processing production during maintenance, urban rail transport, subways and industrial transport.

Masters of the specialty 7M07321 "Transport construction" can perform the following types of professional activities:

- production and technological;
- organizational and managerial;
- experimental research;
- settlement and design;
- scientific research;

Functions of professional activity:

Production and technological:

- planning and solving technological problems encountered in the production process;

- participation in the development of projects of technical conditions and requirements, standards and technical descriptions, regulatory documentation for new objects of professional activity; formation of project goals (programs), problem solving, criteria and indicators for achieving goals, building a structure of their interrelations, identifying priorities for solving problems taking into account the moral aspects of the activity;

- efficient use of materials and raw materials, equipment, machinery, modern computer programs for calculations and design of technological process parameters;

- organization and effective implementation of input quality control of raw materials, production control of semi-finished products and parameters of technological processes, quality of finished products;

- engineering and technical operation of buildings and structures.

Organizational and managerial:

- economic and organizational planning calculations for the reorganization of production;

- organization of the work of the labor collective of performers with the creation of the necessary conditions, equipping (providing) production with labor and material resources, making optimal management decisions in various production conditions;

- finding optimal solutions in the event of labor disputes over staffing, wages, cost and quality of performance of various types of work, ensuring life safety, labor protection and compliance with environmental safety in production areas;

- organization of the work of a team of performers, selection, justification, adoption and implementation of management decisions in the conditions of different opinions, determination of the order of work; organization and preparation of initial data for the selection and justification of scientific, technical and organizational decisions based on economic analysis;

- assessment of production and non-production costs to ensure the quality of products of construction and repair production.

Experimental research:

- development of theoretical models that make it possible to predict changes in the technical condition of transport facilities and the dynamics of the parameters of the efficiency of their technical operation; analysis of the state and dynamics of quality indicators of objects of professional activity using the necessary research methods and tools; development of plans, programs and methods for conducting research of objects of professional activity; conducting scientific research on separate sections (stages, tasks) topics as a responsible performer or together with a scientific supervisor;

- analysis, synthesis and optimization of quality assurance processes for testing, certification of products and services using problem-oriented methods; information search and analysis of information on research objects;

- implementation of metrological verification of basic measuring instruments; implementation of experimental design developments; justification and application of new information technologies; participation in the preparation of practical recommendations on the use of research and development results;

Settlement and design:

- participation in the design of new and reconstruction (modernization) of existing transport facilities, in the development of technological processes for maintenance and repair of transport facilities;

- production of appropriate calculations of structural elements of structures of transport and communication and oil and gas complexes;

- drafting projects and feasibility studies for the construction of new, repairs, maintenance and reconstruction of existing facilities of transport and communication and oil and gas complexes.

- the use of information technologies in the calculations of transport structures, the design of new and reconstruction (modernization) of existing transport structures, the development of technological processes for maintenance and repair of transport structures;

Scientific research:

- possession of basic knowledge in the field of civil, financial, commercial and other branches of law;

- the ability to navigate the current legislation and the ability to apply certain legal norms in practice;

- conducting expertise and providing consulting assistance in various production situations.
- organization of the process of education and upbringing in the field of education using technologies that reflect the specifics of the subject area and correspond to the age and psycho-physical characteristics of students, including their special educational needs;
- design of educational programs and individual educational routes of students; design of the content of academic disciplines (modules), forms and methods of control and control and measuring materials;
- design of educational environments that ensure the quality of the educational process; design of further educational route and professional career

Qualification:
Qualifications and positions are determined in accordance with the "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 May 21, 2012 No. 201-p-m (as amended on 04/17/2013). Graduates of the specialty 7M07321 "Transport construction" can work at the following positions:
- Master of Technical Sciences: organizations of higher and secondary vocational education; research and design institutions; bureaus; companies, firms and organizations (enterprises) of construction, transport and communication, road construction, mining, oil and gas and military complexes; companies, firms and organizations (enterprises) of other economic infrastructures;
Professional competence:
- the ability to apply knowledge, skills and personal qualities for successful work in solving engineering problems in the construction industry.

2. The purpose and objectives of the educational program

The purpose of the OP is to train competitive, in-demand personnel of the profile direction with organizational and managerial, research and professional competencies in accordance with International and professional standards.

Objectives of the educational program:

To promote the formation of the graduate's ability:

- integrate knowledge, cope with difficulties and make judgments based on incomplete or limited information, taking into account ethical and social responsibility for the application of these judgments and knowledge;
- clearly and clearly communicate their conclusions and knowledge and their justification to specialists and non-specialists;
- demonstrate the developing knowledge and understanding gained at the level of higher education, which are the basis or opportunity for the original

development or application of ideas, often in the context of scientific research;

- apply knowledge, understanding and the ability to solve problems in new or unfamiliar situations in contexts and within broader (or interdisciplinary) areas related to the field being studied;

Assistance in the formation of graduate readiness:

- develop design documentation for the creation and modernization of elements of the transport industry;
- to carry out a technical and economic analysis, a comprehensive justification of the decisions taken and implemented in the field of operation, repair and maintenance of transport complex structures;
- apply the results in practice, striving for self-development, improving their skills and skills;
- to the economical and safe use of natural resources, energy and materials during operation, repair, maintenance;
- develop technical documentation and methodological materials, proposals and measures for the creation and modernization.

3. Requirements for the evaluation of learning outcomes of the educational program

3.1 Requirements for applicants

The previous level of education of applicants is higher professional education (bachelor's degree). The applicant must have a diploma of the established sample and confirm the level of knowledge of the English language with a certificate or diplomas of the established sample.

The procedure for admission of citizens to the magistracy is established in accordance with the "Standard rules for admission to training in educational organizations implementing educational programs of postgraduate education".

The formation of a contingent of undergraduates is carried out by placing a state educational order for the training of scientific and pedagogical personnel, as well as paying for training at the expense of citizens' own funds and other sources. The State provides citizens of the Republic of Kazakhstan with the right to receive free postgraduate education on a competitive basis in accordance with the state educational order, if they receive education of this level for the first time.

Scientific, experimental and research activities

- implementation of fundamental and applied scientific research in the study of objects of civil and industrial complexes;
- creation of new production technologies;
- implementation of experimental design developments;

- production of analysis of the state and dynamics of objects of activity using modern methods and methods;
- production of scientifically based experimental studies at the facilities of civil complexes;
- conducting standard and certification tests of materials and products;
- implementation of metrological verification of basic measuring instruments, reagents, hydrocarbon raw materials and final products.

Educational (pedagogical) activity

- knowledge of the functions of teaching courses in basic disciplines, technology, organization, planning and management of construction production, performing academic work as a teacher (teacher) in secondary and vocational education institutions (educational institutions).

At the "entrance", a master's student must have all the prerequisites necessary to master the relevant master's degree program. The list of necessary prerequisites is determined by the higher educational institution independently.

In the absence of the necessary prerequisites, the undergraduate is allowed to master them on a paid basis.

3.2 Requirements for completing studies and obtaining a diploma

Degree/qualifications awarded: The graduate of this educational program is awarded the academic degree of Master of Technical Sciences.

A graduate who has mastered master's degree programs must have the following general professional competencies:

- the ability to independently acquire, comprehend, structure and use new knowledge and skills in professional activities, develop their innovative abilities;
- the ability to independently formulate research goals, establish the sequence of solving professional tasks;
- the ability to apply in practice the knowledge of fundamental and applied sections of disciplines that determine the orientation (profile) of the master's degree program;
- the ability to professionally choose and creatively use modern scientific and technical equipment to solve scientific and practical problems;
- the ability to critically analyze, present, defend, discuss and disseminate the results of their professional activities;
- proficiency in the preparation and execution of scientific and technical documentation, scientific reports, reviews, reports and articles;
- willingness to lead a team in the field of their professional activities, tolerantly perceiving social, ethnic, confessional and cultural differences;
- readiness to communicate orally and in writing in a foreign language to solve the tasks of professional activity.

A graduate who has mastered the master's degree program must have professional competencies corresponding to the types of professional activities that the master's degree program is focused on:

- production activities:
- the ability to independently carry out production, field and laboratory and interpretive work in solving practical problems;
- the ability to professionally operate modern field and laboratory equipment and devices in the field of the master's degree program;
- the ability to use modern methods of processing and interpreting complex information to solve production problems;

project activities:

- the ability to independently draw up and submit projects of research and scientific-production works;
- readiness to design complex research and scientific-production works in solving professional tasks;

organizational and managerial activities:

- readiness to use practical skills in organizing and managing research and scientific-production work in solving professional tasks;
- readiness for the practical use of regulatory documents in the planning and organization of scientific and production work.

When developing a master's degree program, all general cultural and general professional competencies, as well as professional competencies related to those types of professional activities that the master's program is focused on, are included in the set of required results of mastering the master's program.

4. Passport of the educational program

4.1. General information

№	Field name	Note
1	Code and classification of the field of education	7M07 Engineering, manufacturing and construction industries
2	Code and classification of training areas	7M073 Architecture and Construction
3	Group of educational programs	M126 Transport construction
4	Name of the educational program	7M07321 "Transport construction"
5	Brief description of the educational program	The sphere of professional activity can be the following industries: transport and communication, construction, oil and gas, machine-building, chemical, manufacturing, organizational and managerial, experimental research, calculation and design, scientific research.
6	The purpose of the educational program	Training of competitive, in-demand personnel of the profile direction, possessing organizational and managerial, research and professional competencies in accordance with International and professional standards.
7	Type of OP	new
8	The level of the NRK	7
9	ORC Level	7

10	Distinctive features of the OP	No
11	List of competencies of the educational program:	B – Basic knowledge, P – Professional competencies, O - Universal, socio-ethical competencies: C – Special and managerial competencies:
12	Learning outcomes of the educational program (OOP):	RO 1- Apply knowledge and skills of personnel management, production, management psychology, management and information support of business research., understanding and ability to solve problems in new or unfamiliar situations in contexts and within broader (or interdisciplinary) areas related to the field under study. RO 2- Have the skills to use the acquired knowledge for original development and present the results of scientific research, research results in the form of reports, abstracts, publications and public discussions, including in a foreign language with application of ideas in the context of professional activity. RO 3- Possess the ability to solve scientific and technical problems with any variable, permanent objects of study, with complex systems by solving problems on the seismic resistance of buildings and structures, probability theory and seismic statistics in professional activities RO 4 - Possess the ability to determine and implement priorities of activity, ways to improve it based on self-assessment, analyze, critically rethink and provide information, search for scientific and technical information, acquire new knowledge using modern methodology of theoretical and experimental research. RO 5- Conduct surveys to assess the quality of design solutions based on the requirements of regulatory documents, rational planning and design of facilities, risk analysis and mitigation, digital technologies and information security for the design and design justification and monitoring of facilities, patent research of transport facilities. RO 6 - Use and develop based on the methods of the theory of elasticity, oscillatory and physically non-linear complex engineering problems using the finite element method with an assessment of the stress-strain state of transport structures, carry out technical expertise of projects and supervision of their compliance. RO7-Organize and manage the work of the team, developing a team strategy to achieve the set goal, apply modern communication innovative, technologies in the construction, diagnostics, maintenance and repair of transport facilities. RO8-Be able to substantiate and solve issues related to the organization of the production process, to determine the volume and quality performance indicators of the technical condition of transport facilities based on modern diagnostic methods, non–destructive testing, ultrasonic flaw detection, to process and analyze the results of theoretical studies at the technical level and operational condition.

		RO 9 – To be able to evaluate the technical condition and technical and economic indicators of artificial structures with the use of experimental methods, modern software and hardware systems and systems for predicting construction using statistical and other data; technically and economically evaluate foreign and domestic projects, development programs, strategic plans and promptly draw up conclusions and proposals for practical application, and methods for the rational organization of production processes. RO 10 – Demonstrate the solution of research tasks using innovative methods and technologies in the field of education.
13	Form of training	full - time
14	Duration of training	1 year
15	Volume of loans	60
16	Languages of instruction	Kaz, rus.
17	Academic degree awarded	Master of Technical Sciences in the educational program 7M07321 - "Transport construction"
18	Developer(s) and authors:	Department of "SiSM"

4.2. The relationship between the achievability of the formed learning outcomes according to the educational program and academic disciplines

№	Name of the discipline	Brief description of the discipline	Number of credits	Generated learning outcomes (codes)									
				RO1	RO2	RO3	RO4	RO5	RO6	RO7	RO8	RO9	RO10
Cycle of basic disciplines (DB) University component (VC):													
1	**Foreign language (professional)**	The course is aimed at developing vocabulary and grammar for effective communication in the field of project management and improving reading, writing, listening and speaking skills at the Intermediate level. It is expected that undergraduates will acquire and replenish their vocabulary of business English and study grammatical structures that are often used in the context of management. The course consists of 6 modules.	2		+								+
2	**Management**	The course provides an overview of business and management both in the field of theoretical developments and practical activities. It includes consideration of classical management theories and modern approaches to organizations and business conduct. The main blocks of the course are management functions, connecting management processes and interaction between the organization and the external environment. Special emphasis is placed on social responsibility and business ethics, and also includes elements of project management.	2	+								+	+
3	**Management**	The discipline "Psychology of	2	+									+

	Psychology	management" deals with the problems of managerial decision-making in the conditions of practical work of the organization. The relationship of the manager with the staff, the ways of their productive cooperation, methods of conflict resolution are analyzed, special attention is paid to group dynamics, negotiation processes and decision-making technology. Management psychology as a science relies on various psychological methods, the main of which are observation and experiment.											
Cycle of basic disciplines (DB) **Component of choice (KV)**													
4	**Earthquake resistance of buildings and structures**	The purpose of studying the discipline is to acquire in-depth knowledge and skills necessary for a specialist in designing buildings and structures in seismically active areas, mastering the practice of calculating buildings and structures for dynamic loads, including seismic. The discipline studies types of dynamic loads, methods of their mathematical description, causes of earthquakes, principles of seismoregionation and microseismoregionation, principles of earthquake classification by score. A new regulatory framework (Eurocodes) for earthquake-resistant construction of civil and industrial buildings and structures. Basic methods for solving differential equations. Calculation of the strength and stability of buildings and structures to seismic loads.	4			+			+				

		Advanced technologies of seismic reinforcement of buildings and structures used in world practice.											
5	**Theory of elasticity and plasticity**	Discipline is a component of choice. The discipline studies the issues of mechanical reliability of complex spatial structural elements, calculation of complex structural elements, spatial structures, structures for strength, rigidity and stability; mathematical analysis and modeling, theoretical and experimental research; basic provisions and calculation methods. Modern methods of formulation, research and solution of problems of mechanics.	4			+			+				
Cycle of profile disciplines (PD) Component of choice (KV)													
6	**Business Research**	The discipline examines the main characteristics of business research at the enterprise, the concept of technology and the market in business research, the economic parameters of the project as the basis of business research, forecasting and planning in business research. Business research of financial planning in the transport construction planning system, the essence of business management from the strategic positions of the organization's activities in the modern market environment, modern approaches to management by analytical management methods, diagnostic methods, analysis and problem solving.	5	+								+	+

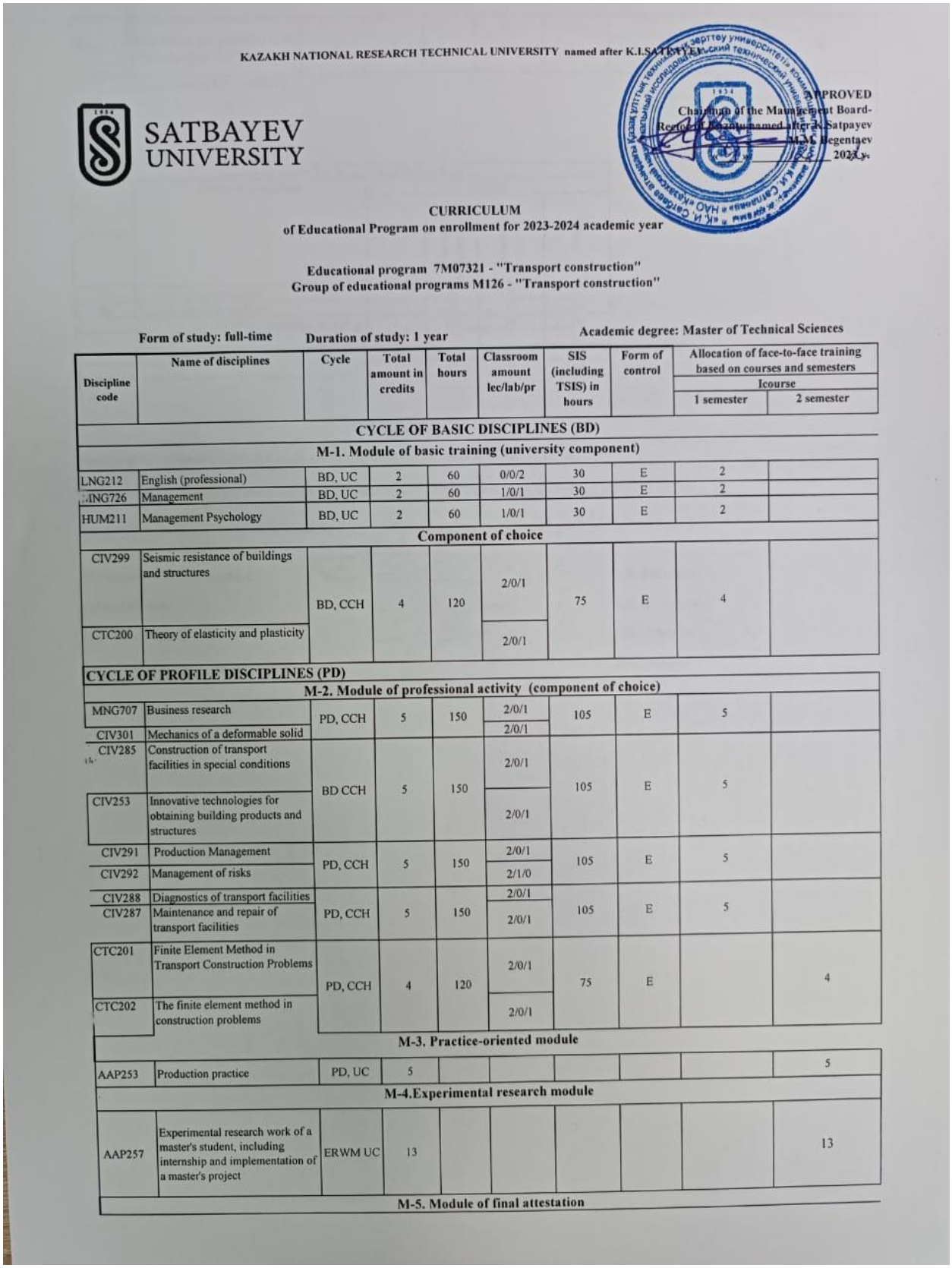
7	**Diagnostics of transport facilities**	The discipline is based on the study of diagnostics of transport structures using methods of non-destructive testing of railway rails, ultrasonic flaw detection of railway rails, bridges, pipes and tunnels, ultrasonic inspection of welded joints of rails at rail welding enterprises, the use of new models of flaw detectors for monitoring rails, bridges and pipes; static and dynamic tests of transport structures; assessment of the technical condition of the structure according to diagnostic data; registration of diagnostic results.	5				+			+	+	+	
8	**Innovative technologies for the production of building products and structures**	The purpose of mastering the discipline is to form undergraduates' competencies about the main types of innovative technologies for the production of building materials, products and structures of various functional purposes for solving scientific, technical and technical-economic tasks in the field of activity and to develop the organization of the introduction of modern technologies into production. In the process of studying, skills are formed to improve the technological processes of production of construction products, taking into account new achievements in the field of modern equipment and controls.	5							+	+		
9	**Mechanics of a deformable solid**	The discipline studies the stress-strain state of a point of a deformable solid, the physical relations of the mechanics of a	5						+			+	+

		deformed solid. The problems of elasticity theory, boundary conditions, and the plane problem of elasticity theory in Cartesian and polar coordinates are considered. Provides in-depth knowledge and methods of solving problems arising in the study of deformation of solids, the mechanics of their destruction, experimental and numerical methods of mechanics of deformable solids.											
10	**Construction of transport facilities in special conditions**	The discipline studies modern methods of geotechnical design of objects of transport construction of transport structures erected on subsident, weak water-saturated clay, bulk, alluvial, swelling, saline, heaving, fractured rocky and eluvial soils. Taking into account the peculiarities of the construction of foundations and foundations on specific soils, the issues of construction in the quarried and moonlit territories, as well as in seismic areas, are outlined.	5							+	+		
11	**Maintenance and repair of transport facilities**	The purpose of studying the discipline is to form professional knowledge and necessary practical skills. The objective of this course is to outline the basics of reconstruction, repair and maintenance of transport structures; to acquire knowledge and skills in the field of technological design and direct work on the reconstruction of transport structures using modern materials, continuous change and grinding of rails, maintenance and average, current, major repairs of	5				+			+	+	+	

		highways and airfields, bridges, pipes, tunnels and subways.											
12	**Production management**	The discipline is aimed at the basics of rational planning and design of construction, the project of organization of construction and production of works, organization of in-line construction, modeling of construction production, tasks of technical rationing. Provides knowledge, skills and abilities that are the presentation of the basics of modern rational organization of transport construction, the method of current and operational planning and management of transport construction, issues of modeling and computer-aided design of construction organization.	5					+				+	+
13	**Risk management**	The discipline studies the features of risk management, as well as the economic foundations of managing their various types to reduce financial losses and ensure the conditions for the successful functioning of the company. It is aimed at risk management of companies and budget organizations in transport construction: general trends and conceptual issues. The organization of risk management in the corporate environment, the characteristics of the process and the financial aspect of risk management in companies and budget organizations.	5					+				+	+
14	**Finite element method in transport**	Training in the theoretical and practical fundamentals of the	4								+	+	

	construction problems	finite element method (FEM) and the use of modern software systems that implement FEM in the design of transport structures. Teaching undergraduates the skills to independently improve their knowledge and deepen their practical experience in the application of the finite element method for the design of transport structures.											
15	Finite element method in construction problems	Discipline is an elective component. Goals and objectives of the discipline: study and practical development of the theory of numerical methods for calculating building structures, which form the basis of modern computer systems and application programs used to develop optimal solutions to design problems. The discipline studies numerical methods of linear algebra, numerical methods for solving differential equations with initial and boundary conditions, and the use of numerical methods in solving specific technical problems on a computer.	4								+	+	

5. Working curriculum of the educational program
1.1. The term of study is 1.0 year



KAZAKH NATIONAL RESEARCH TECHNICAL UNIVERSITY named after K.I.SATBAYEV

SATBAYEV UNIVERSITY

APPROVED
Chairman of the Management Board-
Rector of Kazniu named after K. Satpayev
M.K. Beigentaev
2023 y.

CURRICULUM
of Educational Program on enrollment for 2023-2024 academic year

Educational program 7M07321 - "Transport construction"
Group of educational programs M126 - "Transport construction"

Form of study: full-time **Duration of study: 1 year** **Academic degree: Master of Technical Sciences**

Discipline code	Name of disciplines	Cycle	Total amount in credits	Total hours	Classroom amount lec/lab/pr	SIS (including TSIS) in hours	Form of control	Allocation of face-to-face training based on courses and semesters	
								Icourse	
								1 semester	2 semester
CYCLE OF BASIC DISCIPLINES (BD)									
M-1. Module of basic training (university component)									
LNG212	English (professional)	BD, UC	2	60	0/0/2	30	E	2	
MNG726	Management	BD, UC	2	60	1/0/1	30	E	2	
HUM211	Management Psychology	BD, UC	2	60	1/0/1	30	E	2	
Component of choice									
CIV299	Seismic resistance of buildings and structures	BD, CCH	4	120	2/0/1	75	E	4	
CTC200	Theory of elasticity and plasticity				2/0/1				
CYCLE OF PROFILE DISCIPLINES (PD)									
M-2. Module of professional activity (component of choice)									
MNG707	Business research	PD, CCH	5	150	2/0/1	105	E	5	
CIV301	Mechanics of a deformable solid				2/0/1				
CIV285	Construction of transport facilities in special conditions	BD CCH	5	150	2/0/1	105	E	5	
CIV253	Innovative technologies for obtaining building products and structures				2/0/1				
CIV291	Production Management	PD, CCH	5	150	2/0/1	105	E	5	
CIV292	Management of risks				2/1/0				
CIV288	Diagnostics of transport facilities	PD, CCH	5	150	2/0/1	105	E	5	
CIV287	Maintenance and repair of transport facilities				2/0/1				
CTC201	Finite Element Method in Transport Construction Problems	PD, CCH	4	120	2/0/1	75	E		4
CTC202	The finite element method in construction problems				2/0/1				
M-3. Practice-oriented module									
AAP253	Production practice	PD, UC	5						5
M-4.Experimental research module									
AAP257	Experimental research work of a master's student, including internship and implementation of a master's project	ERWM UC	13						13
M-5. Module of final attestation									

ECA213	Registration and protection of the master's project (RaPMP)	FA	8						8
	Total based on UNIVERSITY:							30	30
								60	

Number of credits for the entire period of study					
Cycle code	**Cycles of disciplines**	**Credits**			
			university component (UC)	**component of choice (CCH)**	**Total**
BD	Cycle of basic disciplines		6	4	10
PD	Cycle of profile disciplines		9	20	29
	Total for theoretical training:	***0***	***15***	***24***	***39***
	ERWM				***13***
FA	Final attestation	8			8
	TOTAL:	**8**	**15**	**24**	**60**

Decision of the Academic Council of Kazntu named after K.Satpayev. Protocol № 3 от 27.10.2022y.

Decision of the Educational and Methodological Council of Kazntu named after K.Satpayev. Protocol №2 от 21.10.2022 y.

Decision of the Academic Council of the Institute_____ Protocol №3 от "4" 10 2022 y.

Vice-Rector for Academic Affairs _____ **B.A. Zhautikov**

Institute Director _____ **B.U. Kuspangaliev**

Department Head _____ **D.A. Akhmetov**

Specialty Council representative from employers _____ **D.K. Nusupov**

EXPERT OPINION

For educational programs 7M07320 – "Transport construction", 7M07321 – "Transport construction", 7M07322 – "Transport construction".

Submitted for review for educational programs 7M07320 – "Transport construction", 7M07321 – "Transport construction", 7M07322 – "Transport construction" were developed by the teaching staff of the Department "Construction and Building Materials", Institute of Architecture and Construction, NAO "Kazakh National Technical University named after K.I.Satpayev" - assoc. professor SiSM Akhmetov D.A., assoc. professor Uskembayeva B.O., professor Shayakhmetov S.B.

The developed educational programs include the basic rules and regulations for the scientific, pedagogical and specialized direction of training of masters 7M07320 - "Transport construction", 7M07321 – "Transport construction", 7M07322 – "Transport construction", a list of regulatory documents, expected competencies of students based on the results of full development of 2-year, 1.5-year and 1-year cycle, working curriculum.

According to the educational programs, the curricula for the modular training system of the directions 7M07320 – "Transport construction", 7M07321 – "Transport construction", 7M07322 – "Transport construction". All disciplines included in the curriculum are evenly distributed over semesters, the logical sequence of studying disciplines is observed.

Summing up, it can be concluded that the considered educational programs, the catalog of elective disciplines and the working curriculum can be used to organize the educational process in the directions 7M07320 – "Transport construction", 7M07321 – "Transport construction", 7M07322 – "Transport construction", the development of the disciplines of the proposed modules contributes to the formation of a personality capable of critical analyze, evaluate and synthesize new complex ideas to solve the problems of construction of transport facilities.

Expert,
Candidate of Technical Sciences, head of the company
Geo Track LLP **D.K. Nusupov**