



I APPROVED
decision of US ALT from
30 March 2023 (Protocol №13)
President-Rector
Amirgalieva S.N.

EDUCATIONAL PROGRAM

Name: «7M07159 – Transport structures (scientific and pedagogical, 2 years)»

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

Code and classification of areas of training: 7M071 – Engineering and engineering

Code and group of educational programs: M310 – Transport structures

Date of registration in the Register: 11/06/2023

Registration number: 7M07100402

Almaty, 2023

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1 DEVELOPED:

Ph. D. Associate
professor ALaT
(position)


(signature)

Bondar I.S.
(FULL NAME)

Doctor of Technical Sciences,
Professor
(position)


(signature)

Makhmetova N.M.
(FULL NAME)

Ph.D., professor ALaT
(position)


(signature)

Kvashnin M.Ya.
(FULL NAME)

V.S.N., Doctor of Technical Sciences,
Professor of «KazdorNII» JSC
(position)


(signature)

Shalkarov A.A.
(FULL NAME)

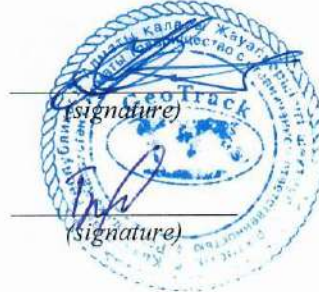
2nd year Master's,
group MN-ITI-21-1 (position)


(signature)

Komyasbai A.D.
(FULL NAME)

2 EXPERTS:

Candidate of Technical Sciences,
Director of «GEO TRACK»
(position)


(signature)

Nusupov D.K.
(FULL NAME)

Candidate of Technical Sciences,
Director of «GEO TRACK»
(position)


(signature)

Masanov T.K.
(FULL NAME)

3 RECENSEE:

«Kazakh National
Research Technical University
K.I. Satpayev Kazakh National Research
Technical University
Professor of «SISM» department
Doctor of Technical Sciences
(position)


(signature)

Shayakhmetov S.B.
(FULL NAME)

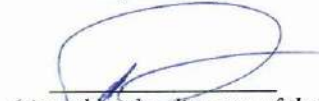
4 REVIEWED AND RECOMME:

Meeting of the AC (Chair of the SI
Department)
Protocol №, «6»
15.03.2023.


(Signature of the head of the
department)

Ismagulova S.O.
(FULL NAME).

Meeting COC-UMB
Protocol №, «7»
15.03. 2023.


(signed by the director of the
institute)

Chigambaev T.O.
(FULL NAME)

Meeting UMS
Protocol №, «10»
29.03.2023.


(signature of the vice-rector for
AD)

Zharmagambetova M.S.
(FULL NAME)

5 APPROVED by the decision of the Academic Council of 30 March 2023 № 13

6 INTRODUCED 30.05.2023

2. REGULATORY REFERENCES

The educational program is developed on the basis of the following regulations and professional standards:

1. Law of the Republic of Kazakhstan «On Education» dated July 27, 2007 №. 319-III (as amended and supplemented as of March 27, 2023).

2. 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. Industry qualifications framework for the field of “Education”, approved by the Minutes of the meeting of the industry 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 № 3.

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

5. Qualification reference book for 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 № 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 April 20, 2011 (with additions and changes dated April 4, 2023 № 145).

7. Classifier of areas of training for personnel with higher and postgraduate education, approved by order of the Minister of Education and Science of the Republic of Kazakhstan dated October 13, 2018 № 569 (with amendments and additions as of June 5, 2020).

8. Algorithm for inclusion and exclusion of 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 №. 665 (with additions and changes as of December 23, 2020 № 536).

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

10. Atlas of new professions: «BigData analyst in construction , Digital designer (BIM specialist)».

3. Passport of the educational program

No	Fieldname	Note
1	Registration number	7M07100402
2	Code and classification of field of education	7M07 - Engineering, manufacturing and construction industries
3	Code and classification of areas of training	7M071 Engineeringandengineering
4	Code and group of educational programs	M310-TransportationFacilities
5	Name of educational program	7M07159 – Transportstructures
6	Typeof OP	New
7	Purpose of the OP	Preparation of highly qualified, competitive and in-demand masters of scientific and pedagogical directions with organizational and managerial competencies in the field of survey and operation of transport facilities.
8	ISCED level	7
9	Level accordingto NQF	7
10	ORK level	7
11	Distinctive features of the OP	No
	Partneruniversity (SOP)	
	Partneruniversity (DDOP)	
12	Form of study	Full-time
13	Language of instruction	Kazakh, Russian
14	Volume of loans	120
15	Academicde greearwarded	Master of Engineering Science in Education program 7M07159 – Transportstructures
16	Availability of an annex to the license for the direction of personnel training	KZ12LAA00025205 (004)
17	Availabilityof EP accreditation	Have
	Name of accreditation body	NAOKO
	Validityperiod of accreditation	01.04.2023-31.03.2028

4. Competency model of a graduate

Objectives of the educational program:

1. Promoting the development of the graduate's abilities:
 - 1) demonstrate developmental knowledge and understanding acquired at the higher education level that provides the basis or opportunity for the original development or application of ideas, often in the context of scientific research;
 - 2) apply knowledge, understanding, and problem-solving ability to new or unfamiliar situations within the contexts and frameworks of broader (or interdisciplinary) areas related to the field of study;
 - 3) integrate knowledge, cope with complexity and make judgments based on incomplete or limited information, taking into account ethical and social responsibility for the application of these judgments and knowledge;
 - 4) clearly and clearly communicate your conclusions and knowledge, and their justification to specialists and for non-specialists;
2. Promoting the formation of graduates' readiness to:
 - 1) develop design documentation for the creation and modernization of transport construction;
 - 2) carry out calculation and design work on the modernization of existing transport construction facilities;
 - 3) develop technical documentation and methodological materials, proposals and measures for the creation and modernization of transport construction facilities.
 - 4) conduct a technical and economic analysis, a comprehensive justification of decisions made and implemented in the field of operation, repair and maintenance of transport construction facilities, their units, systems and elements;
 - 5) apply the results in practice, strive for self-development, improve your qualifications and skills.
 - 6) to the economical and safe use of natural resources, energy and materials during operation, repair, and maintenance of transport facilities and structures.

Learning outcomes:

- LO-1 Generate theoretical and methodological foundations of management psychology, methods for studying the socio-psychological characteristics of the "individual - team", "leader - team", interpersonal and problems within the team, based on higher education pedagogy - the formation of competence and skills suitable for activities in field of higher education pedagogy.
- LO-2 Demonstrate knowledge of the historical development of science and philosophy of science, as a system of knowledge that shapes the worldview, with mastery of professional English for research in the state, Russian and foreign languages in oral and shift forms.
- LO-3 Use modern analytical and engineering methods for calculating the stress-strain state of transport objects using software systems to solve problems in the mechanics of stress and deformation of composite, granular, solid bodies and rocks based on general laws.
- LO-4 Confirm basic theoretical knowledge and basic practical skills in matters of strategic management of departmental units, strategy analysis of the external and internal situation of the enterprise and corporate management culture, using them in business research for further implementation prospects.
- LO-5 write a system of knowledge about the meaning and place of science, about the main stages of the development of scientific thought in the country, the methodological basis for organizing scientific research at various levels, the principles of planning, conducting, and recording the results of experience, experiment and other research.
- LO-6 to maintain the progress of geodetic work at all stages of construction of structures, such as surveys, design, with geodetic support for the operation of linear structures when laying

out elements of the route, profile, plan and inspections, tests to increase reliability and durability and compliance with regulatory requirements.

LO-7 Give a critical assessment of the functional and operational requirements of transport construction for the formation and adoption of final decisions with the development and execution of design and estimate documentation, revealing the rationale and essence of further implementation while ensuring reliability and durability.

LO-8 To trace the essence of the principles and directions of digital activities of structural units in compliance with the legislative acts of the Republic of Kazakhstan in the field of information policy and security for the formation and implementation of information and analytical automated systems in the field of development and implementation of digital transformation.

LO-9 Evaluate the design of transport structures, taking into account operational, technical parameters and methodological materials and the use of documentation when diagnosing objects with detecting the location and size of defects and deformations during inspections, surveys and tests.

LO-10 Highlight priorities when analyzing the technical parameters of infrastructure structures according to industry regulations, technical and technological equipment, operational indicators for changing the category and searching for new parameters corresponding to reconstruction with improved operational and environmental indicators.

Area of professional activity: areas of science and technology related to road transport, roads, transport structures and transport infrastructure engineering.

Objects of professional activity:

- Local executive authorities in the field of railway transport, transport construction and their regional structures;
- Organizations and enterprises of the transport industry in the field of management, operation, maintenance of roads, urban rail transport and subways, as well as industrial transport;
- Organizations and enterprises of the transport industry in the field of technologies for material processing production during maintenance, rail urban transport, subways and industrial transport;
- Research organizations.

Types of professional activities:

- production and technological;
- organizational and managerial;
- experimental research;
- calculation and design;
- scientific research;
- pedagogical.

Functions of professional activity:

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

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

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

4) economic and organizational planning calculations for the reorganization of production;

5) development of theoretical models that make it possible to predict changes in the technical condition of highways and the dynamics of 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 on objects of professional activity; conducting scientific research on individual sections (stages, tasks) of the topic as a responsible executor or together with a supervisor;

6) analysis, synthesis and optimization of processes for ensuring the quality of tests, 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; carrying out 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;

7) organization of the work of a team of performers, selection, justification, adoption and implementation of management decisions in the face 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;

8) organization of the process of training and education in the field of education using technologies that reflect the specifics of the subject area and the psychophysical characteristics of students corresponding to their age, including their special educational needs;

9) designing educational programs and individual educational routes for students; designing the content of educational disciplines (modules), forms and methods of control and control and measuring materials; designing educational environments that ensure the quality of the educational process; designing a further educational route and professional career.

List of specialist positions: Teacher of educational organization, leading researcher, senior researcher, researcher, junior researcher, head of a research laboratory, head of a laboratory, researcher, first head of a production organization (enterprise), deputy head of a production organization (enterprise), chief engineer of a production organization (enterprise), head of a structural unit of a production organization (enterprise), deputy head of a structural unit of a production organization (enterprise), manager, engineering and technical worker.

Professional certificates received upon completion of training: not provided.

Requirements for the previous level of education: higher education (bachelor's degree) in the field of study 7M071 - Engineering and engineering.

The educational program of the scientific and pedagogical master's degree includes two types of internship:

- teaching practice – in the organization of education;
- research practice – at the place where the dissertation was completed.

Teaching practice.

Pedagogical practice of master's students is practical training of future teachers, carried out in conditions as close as possible to the professional activities of a teacher. Pedagogical practice is aimed at the formation of functional competencies and the development of abilities to perform tasks in the professional and educational spheres. In the process of teaching practice, the professional and personal development of future teachers is activated. During the internship, master's students draw up and implement a plan of educational activities with a group of

students, develop and conduct a system of classes that reflect the completed segment of the learning process based on the content of their major disciplines, and demonstrate mastery of modern technologies and teaching methods.

The purpose of teaching practice is:

- consolidation and deepening of knowledge in general scientific, psychological-pedagogical, methodological, basic and core disciplines;
- formation of pedagogical abilities, skills and competencies based on theoretical knowledge.

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

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

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

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

The duration of teaching practice is determined by the curriculum of the educational program in the direction of training 7M071 - Engineering and Engineering.

Research practice.

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

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

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

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

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

RWMS should:

- 1) correspond to the main issues of the master's educational program on which the master's thesis is defended;
- 2) be relevant and contain scientific novelty and practical significance;
- 3) be based on modern theoretical, methodological and technological achievements of science and practice;

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

5) be carried out using modern scientific research methods;

6) contain research (methodological, practical) sections on the main protected provisions. The master's thesis is carried out during the period of scientific research.

Within the framework of NIRM, the individual work plan of a master's student for familiarization with innovative technologies and new types of production provides for mandatory scientific internship in scientific organizations and (or) organizations of relevant industries or fields of activity.

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

Objectives of the research work:

- to prepare highly qualified modern specialists with broad fundamental knowledge;

- develop the abilities and skills of undergraduates to critically analyze and master theoretical concepts in order to implement them in practice and with subsequent testing at the international level;

- to form in master's students the ability for professional growth and self-development, skills for independent creative mastery of new knowledge throughout their entire active life.

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

- demonstrate a systematic understanding of the field of study, mastery of the skills and research methods used in this field;

- plan, develop, implement and adjust the complex process of scientific research;

- contribute with their own original research to expanding the boundaries of the scientific field, which may merit publication at the national or international level;

- critically analyze, evaluate and synthesize new and complex ideas;

- communicate your knowledge and achievements to colleagues, the scientific community and the general public;

- promote the development of a knowledge-based society.

Scientific internship is carried out for the purpose of:

- fulfilling the objectives of the master's thesis;

- familiarization with innovative technologies and new types of production;

- familiarization with the latest theoretical, methodological and technological achievements of domestic and foreign science;

- familiarization with modern methods of scientific research, processing and interpretation of experimental data;

- consolidating theoretical knowledge acquired in the process of learning to acquire practical skills, competencies and professional experience, as well as mastering best practices in this field.

Requirements for RWMS:

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

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

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

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

5) is carried out using modern scientific research methods;

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

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

- knowledge in the field of scientific and management activities in conditions of constant updating of knowledge and modernization of society;
- conducting independent research activities on problems and disciplines;
- the ability to practically process and transmit information using modern technical means;
- ability to predict directions of technical and scientific development of the country;
- possession of modern specialized skills and methods necessary to make effective decisions in the field of engineering and technology.

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

Contents of RWMS.

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

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

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

The undergraduate research work includes:

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

Organization of scientific internship within the framework of the Scientific Research Institute of Mechanical Engineering.

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

The terms of the scientific internship are determined by the Academy independently.

A scientific internship is usually planned during the second year of a master's degree.

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

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

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

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

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

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

6. STRUCTURE OF THE MASTER'S BASIC EDUCATIONAL PROGRAM IN SCIENTIFIC AND PEDAGOGICAL DIRECTIONS

№	Name of cycles of disciplines and activities	Total labor intensity	
		in academic hours	in academic credits
1.	Theoretical training	2640	88
1.1	Cycle of basic disciplines (BD)	1050	35
1)	University component (VC):	600	20
	History and philosophy of science		
	Foreign language (professional)		
	Higher education pedagogy		
	Psychology of management		
	Teaching practice		
2)	Component of choice (CV)	450	15
1.2	Cycle of major disciplines (PD)	1590	53
1)	University component and (or) elective component		
2)	Research practice		
2.	Research work of a master's student	720	24
1)	Master's student's research work, including internship and master's thesis	720	24
3	Additional types of training (ADE)	-	-
4	Final certification (IA)	Not less than 240	At least 8
1)	Preparation and defense of a master's thesis (OiZMD)	240	8
	Total	Not less than 3600	Not less than 120

7. Working curriculum for the entire period of study

АО "Академия логистики и транспорта"

УЧЕБНЫЙ ПЛАН

Форма обучения: очная

Направление подготовки:
7М071 – Инженерия и инженерные дела

Срок обучения: 2 года

Группа образовательных программ:
7М0710 – Транспортные сооружения

Принят: 2023 год

Наименование образовательной программы:
7М07100 – Транспортные сооружения
Степень: магистр технических наук



№	Код дисциплины	Наименование дисциплины	Общая трудоемкость		Формы контроля, семестр		Объем учебной нагрузки, контактные часы						Распределение по семестрам				Закрепление за кафедрой
			в академических часах	в академических кредитах	Экзамены	ИП (КР)	Всего часов	Аудиторные			СРС		1 курс		2 курс		
								лекции	практические	лабораторные	СРСФ	СРС	1 сем.	2 сем.	3 сем.	4 сем.	
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18			
ЦИКЛ БАЗОВЫХ ДИСЦИПЛИН (БД):																	
1.1.	Вузовский компонент:		800	20	5		600	68	82	0	32	298	9	11	0	0	
1.1.1.	23-0-M-VK-IFN	История и философия науки	180	5	1		150	30	15		5	97	5				СГДМФВ
1.1.2.	23-0-M-VK-(Uz/P)	Иностраный язык (профессиональный)	120	4	1		120		48		0	87	4				ЯП
1.1.3.	23-0-M-VK-PVZh	Педагогика высшей школы	150	6	2		150	30	15		8	87		8			СГДМФВ
1.1.4.	23-0-M-VK-PU	Психология управления	60	2	2		60	8	7		8	37		2			СГДМФВ
1.1.5.	23-0-M-VK-RedPr	Педагогическая практика	120	4	2		120							4			СГДМФВ
1.2.	Компонент по выбору:		450	15	2	0	450	75	75	0	16	284	9	6	0	0	
1.2.1.	23-0-M-KV-UP	Упругость и пластичность	270	9	1		270	48	48		8	172	9				СИ
	23-0-M-KV-MUDTT	Механика упругого деформируемого твердого тела															
1.2.2.	23-0-M-KV-SM	Стратегический менеджмент	180	6	2		180	30	30		8	112		6			ЛМТ
	23-0-M-KV-BI	Бизнес-исследования															
ВСЕГО по циклу БД:			1050	35	7	0	1050	143	157	0	48	582	18	17	0	0	
ЦИКЛ ПРОФИЛИРУЮЩИХ ДИСЦИПЛИН (ПД):																	
2.1.	Вузовский компонент:		800	20	3		600	75	75	0	16	224	6	0	14	0	
2.1.1.	23-0-M-VK-OPNI	Организация и планирование научных исследований (в ИТЛ)	180	6	1		180	30	30		6	112	6				СИ
2.1.2.	23-0-M-VK-RIZMKE	Решение инженерных задач методом конечных элементов	270	9	0		270	48	48		8	172		9			СИ
2.1.3.	23-0-M-VK-IsPr	Исследовательская практика	150	5	0		150							6			СИ
2.2.	Компонент по выбору:		990	33	5	0	990	165	165	0	40	520	6	12	15	0	
2.2.1.	23-0-M-KV-LST	Линейные сооружения на транспорте	180	6	1		180	30	30		5	112	6				СИ
	23-0-M-KV-ELS	Эксплуатация линейных сооружений															
2.2.2.	23-0-M-KV-PSDtoTS	Проектно-сметное дело в транспортном строительстве	180	6	2		180	30	30		6	112		6			СИ
	23-0-M-KV-PSDTs	Проектно-сметная документация транспортных сооружений															
2.2.3.	23-0-M-KV-ITTS	Инновационные технологии в транспортном строительстве	180	6	2		180	30	30		8	112		6			СИ
	23-0-M-KV-TsIT	Цифровизация инфраструктуры транспорта															

2.2.4.	23-59-M-KV-OITS	Обследование и испытания транспортных сооружений	270	9	3		270	45	45	8	172			9		СИ	
	23-59-M-KV-TDTS	Техническая диагностика транспортных сооружений															
2.2.5.	23-59-M-KV-UisIS	Усиление инфраструктуры линейных сооружений	180	6	3		180	30	30	8	112			8		СИ	
	23-59-M-KV-KPRRLS	Комплексные проектные решения при реконструкции линейных сооружений															
ВСЕГО по циклу ПД:			1590	53	8	0	1590	240	240	0	56	904	12	12	29	0	
ИТОГО ПО ТЕОРЕТИЧЕСКОМУ КУРСУ ОБУЧЕНИЯ (ТКО):			2640	88	15	0	2640	383	397	0	104	1486	30	29	29	0	
3.	23-0-M-VK-NIRM	Научно-исследовательская работа магистранта, включая прохождение стажировки и выполнение магистерской диссертации	720	24										1	16	7	СИ
4.	23-0-M-VK-OZMD	Оформление и защита магистерской диссертации	240	8												8	СИ
ИТОГО ЗА ВЕСЬ ПЕРИОД ОБУЧЕНИЯ:			3600	120			2640	383	397	0	104	1486	30	30	45	16	
ДОПОЛНИТЕЛЬНЫЕ ВИДЫ ОБУЧЕНИЯ (ДВО):																	
5.	Дополнительные виды обучения																

СОГЛАСОВАНО:

Проректор по АД  Жармагамбетова М.С.

Директор ДАПК  Липская М.А.

РАЗРАБОТАНО:

Директор института "ТИ"  Чигамбаев Т.О.

Заведующая кафедрой "СИ"  Исмагулова С.О.



8. CATALOG OF DISCIPLINES OF THE UNIVERSITY COMPONENT

EDUCATIONAL PROGRAM

7M07159 – Transport construction

Level of education: Master's degree

Duration of study: 2 years

Year of admission: 2023

Cycle	Component	Name of the discipline	Total labor intensity		Semester	Learning outcomes	Brief description of the discipline	Prerequisites	Post-requisites
			academic hours	academic credits					
1	2	3	4	5	6	7	8	9	10
DB	VK	History and philosophy of science	150	5	1	LO 2	<p>Master's students are given knowledge on the history of science and special sciences, which provide the opportunity to understand the dynamics of the development of science; the philosophy of science allows one to reveal the foundations of science as a system of scientific knowledge that shapes public consciousness. The methodology of science allows us to understand the methodological foundations and problems of modern science in order to develop a methodological culture for the scientific research work of future specialists. Active learning methods are used such as interactive and digital technologies, project-based teaching methods, problem-based learning technology and gamification</p>	Undergraduate disciplines	Master's student's research work Master's thesis defense
DB	VK	Foreign language (professional)	120	4	1	LO 2	<p>Mastery of professional English at an advanced level (for non-linguistic areas), grammatical characteristics of the scientific style in its oral and written forms, professional oral communication in monologue and dialogic form according to the educational program, as well as the ability to demonstrate research results in the form of reports, abstracts, publications and public discussions; interpret and present scientific research results in a foreign language. The discipline uses interactive</p>	Undergraduate disciplines	Master's student's research work Master's thesis defense

DB	VK	Higher education pedagogy	150	5	2	LO 1	teaching methods, case methods, role-playing games, group work Studying the theoretical and methodological foundations of higher education pedagogy, the modern paradigm of higher education and the system of higher professional education in the Republic of Kazakhstan, didactics and the process of education in higher education, the formation of professional competence and skills necessary for the implementation of full-fledged teaching activities. The discipline uses interactive teaching methods such as role-playing games and group work	Undergraduate disciplines	Master's student's research work Master's thesis defense
DB	VK	Psychology management	60	2	2	LO 1	Aimed at studying the theoretical and methodological foundations of management psychology, the main socio-psychological problems of management and ways to solve them, familiarization with methods for studying important socio-psychological characteristics of the individual and team, professional, interpersonal and intrapersonal problems using management psychology. The discipline uses active learning methods: teamwork, cluster, role-playing games, discussions, brainstorming ("brainstorming"), express survey	Undergraduate disciplines	Master's student's research work Master's thesis defense
DB	VK	Teaching practice	120	4	1	LO 4	The discipline is aimed at studying the theoretical and methodological foundations of higher education pedagogy; examines the modern paradigm of higher education and the system of higher professional education in the Republic of Kazakhstan; studies didactics and the process of education in higher education; develops professional competence and skills necessary to implement	Undergraduate disciplines	NIRM, ZMD
PD	VK	Organization and planning of scientific research (English)	180	6	1	LO 5	Formation of a system of knowledge among undergraduates about the place and role of science, about the main stages of the formation of science in Kazakhstan, about the organizational and methodological foundations of organizing scientific research at the macro, meso and micro levels, knowledge is given about the basic principles of	Undergraduate disciplines	Strategic management Solving engineering problems using the finite element method

9. CATALOG OF CHOICE COMPONENT DISCIPLINES

EDUCATIONAL PROGRAM

7M07159 – Transport construction

Level of education: Master's degree

Duration of study: 2 years

Year of admission: 2023

Cycle	Component	Name of the discipline	Total labor intensity		Semester	Learning outcomes	Brief description of the discipline	Prerequisites	Post-requisites
			academic hours	academic credits					
1	2	3	4	5	6	7	8	9	10
DB	KV	Elasticity and plasticity	270	9	1	LO 3	Apply modern analytical and engineering methods for analyzing the stress-strain state of transport industry facilities, as well as complexes of software packages designed to study the stress-strain state of transport structures for various purposes, analyze stresses and deformations, solve elementary two-dimensional problems in rectangular and polar coordinates and three-dimensional problems of the theory of elasticity, using experimental methods of solutions.	Undergraduate disciplines	Solving engineering problems using the finite element method Research practice Strategic management Design and estimate documentation for the construction of linear structures
		Mechanics of elastic				LO 3	Mechanics of an elastic deformable solid. Mastery of modern methods and approaches in the study of	Undergraduate	Solving engineering

<p>Inspection and testing of transport structures Technical diagnostics of transport structures</p>					<p>Business research</p>	
<p>Design and estimate documentation on for the construction of linear structures Strengthening the infrastructure of linear structures Integrated design solutions for the reconstruction of linear structures Solving engineering problems using the finite</p>	<p>Undergraduate disciplines</p>	<p>Mastering the theory by master's students, as well as developing practical skills in business research and analytics, life cycle analysis of the development of promising technologies. The scientific and technical aspects of the project are being studied. Active learning methods used in the discipline - individual assignment</p>	<p>LO 4</p>			

DB	KV	Design and estimate is in transport construction	180	6	2	LO 7	<p>Studies the functional and operational requirements of transport construction, the requirements of regulatory and legislative acts and documents, design output data, the procedure for developing, forming and making design decisions, assessing the quality of design solutions and the development of design and estimate documentation with the preparation of design and estimate documentation, general information about design - survey work and estimate documentation for transport construction.</p>		<p>e NIRM, IA. Solving engineering problems using the finite element method Inspection and testing of transport structures Technical diagnostics of transport structures NIRM, IA.</p>
		Design and estimate documentation for constructions of linear structures				LO 7	<p>Studies the preparation of a set of documents that reveal the essence of the project and contain justification for its feasibility and further implementation, carried out to ensure the reliability and durability of transport structures, using the theoretical foundations of soil compaction of the roadbed and standardization of the degree of compaction, basic provisions on methods and means of ensuring the required degree of compaction transport facilities.</p>		<p>Solving engineering problems using the finite element method Inspection and testing of transport structures Technical</p>

Рецензия
на образовательную программу
«7М07159 – Транспортные сооружения» по направлению подготовки «7М071 –
Инженерия и инженерное дело»

Образовательная программа (структура научно-педагогическая – 2 года) «7М07159 – Транспортные сооружения» содержит следующую информацию: квалификация выпускника, форма и срок обучения, направление и характеристика деятельности выпускников, приведен полный перечень компетенций, которыми должен обладать выпускник в результате освоения данной образовательной программы.

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

В учебном плане образовательной программы определен перечень всех учебных дисциплин обязательного компонента и компонента по выбору, трудоемкость каждой учебной дисциплины в кредитах, последовательность их изучения, виды учебных занятий и формы контроля. Каталог лективных дисциплин. Каталог внутривузовского компонента полностью отражает предметность дисциплин («Техническая диагностика транспортных сооружений», «Усиление инфраструктуры линейных сооружений», «Инновационные технологии в транспортном строительстве», «Решение инженерных задач методом конечных элементов»).

Соблюдена последовательность изучения дисциплин, включены дисциплины необходимые для производства и технологического процесса.

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

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

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

Выводы:

В целом, рецензируемая образовательная программа отвечает основным требованиям ГОСО, национальной рамки квалификаций, отраслевой рамки квалификаций, профессиональных стандартов. Адаптирована к новым профессиям и способствует формированию общекультурных и профессиональных компетенций по направлению подготовки «7М071 – Инженерия и инженерное дело».

Рецензент

«Катахского национального
исследовательского технического
университета имени К.Н. Сатпаева»
Профессор кафедры «С и СМ» Ш. Дылиев
доктор технических наук



Шаяхметов С.Б.

13. Protocols of review and approval

Academy of Logistics and Transport

PROTOCOL№6 (beginning of the formation of the OP)

Meetings

Academic Committee for the Educational Program and Leading Teachers of the
Department of Civil Engineering

Almaty

«15» 03 2023

Chairman: Ismagulova S.O.

Secretary: Zhadraev R.Zh.

Present : members of the Academic Committee, leading teaching staff of the department

Representatives from the production: V.S.N., Doctor of Technical Sciences, Professor of «KazdorNII» JSC - Shalkarov A.A. Deputy Director of «GEO TRACK» LLP Masanov T.K., Director of «GEO TRACK» LLP Nusupov D.K.

Students: 2nd year Master's student, group MN-ITI-21-1 Konysbai A.D.

AGENDA :

5. Consideration of the graduate competency model
6. Consideration of the possibility of including disciplines in QED and RUP
On the first question

SPEAKER:

Head Department Ismagulova S.O. proposed to consider the competency model of a graduate at 3 levels of education: bachelor's, master's, and doctorate.

The graduate competency model includes the following parts:

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

SPEAKER: V.S.N., Doctor of Technical Sciences, Professor of KazdorNII JSC - A.A. Shalkarov, 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.

SPEAKED:

Member of the department Kvashnin M.Ya., who proposed to approve.

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

DECIDED:

- provide a competency model of a graduate at 3 levels of education: bachelor's, master's, doctoral studies for consideration and approval by the Council of the Institute of Transport Engineering.

On the second question

SPEAKER: Head of the department Ismagulova S.O. with a proposal to hear representatives of employers and students on the inclusion of new disciplines in the QED and RUP of admission for 2023.

SPEAKED BY: Director of «GEO TRACK» LLP Nusupov D.K.

Organizations are interested in specialists with a good level of training and knowledge in the design and construction of bridges, tunnels and subways. We make proposals to introduce the following popular disciplines into the RUP: Technical diagnostics of transport structures, Strengthening the infrastructure of linear structures, Innovative technologies in transport construction.

SPEAKED BY: 2nd year master's student, group MN-ITI-21-1 Konysbay A.D.

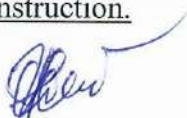
We consider it necessary to include the following disciplines in the RUP: Design and estimate documentation for the construction of linear structures, Linear structures on transport.

DECIDED:

5. Please take note of the information;
6. Take into account suggestions and recommendations of employers and students;

Consider including the following disciplines in the RUP: Design and estimate documentation for the construction of linear structures, Linear structures on transport, Technical diagnostics of transport structures, Strengthening the infrastructure of linear structures, Innovative technologies in transport construction.

Chairman:



Ismagulova S.O.

Secretary:



Zhadraev R.Zh.

Academy of Logistics and Transport

PROTOCOL №7 (before approval of the OP on the CS)

Meetings of the COC UMB Institute of Transport Engineering

Almaty

«15» 03 2023

Chairman: Chigambaev T.O.

Secretary: Utepova A.

Present : members of the UMB KOC, members of the Academic Committee

Representatives from the production: V.S.N., Doctor of Technical Sciences, Professor of «KazdorNII» JSC - Shalkarov A.A. Deputy Director of «GEO TRACK» LLP Masanov T.K., Director of «GEO TRACK» LLP Nusupov D.K.

Students: 2nd year Master's student, group MN-ITI-21-1 Konysbai A.D.

AGENDA :

1. Review of the Catalog of Elective Disciplines (CED), the Work Curriculum (WCU), passports of educational programs for bachelor's, master's and doctoral studies.

SPEAKER: Head. Department Ismagulova S.O. submitted (a) for consideration the QED, RUP of bachelor's, master's and doctoral studies.

At the Department of Civil Engineering, a meeting was held with the participation of representatives of employers and students to discuss the structure and content of the educational program 7M07159 – Transport facilities.

Representatives of employers and students proposed a number of new relevant disciplines, which the department approved and included in the new QED and RUP.

DECIDED:

7. Please take note of the information;

8. Take into account all suggestions and recommendations of employers and representatives of student activists;

9. Submit KED, RUP and EP of bachelor's, master's and doctoral studies for consideration and approval by the Council of the Institute, the Academy's Board of Directors.

Chairman of the COC UMB:

Secretary:



Chigambaev T.O.

Utepova A.

15. REGISTRATION SHEET OF CHANGES

No.	Section, paragra ph docume nt	Type of change (replace, cancel, add)	Number and date notices	Change made	
				date	Last name and initials, signature, position