MINISTRY OF EDUCATION AND SCIENCE OF THE REPUBLIC OF KAZAKHSTAN
KARAGANDA STATE UNIVERSITY
NAMED AFTER ACADEMICIAN E. A. BUKETOV

«AGREED»
Director of "Bus Park No. 2" LLP, Karaganda»

_____ G. M. Zhaksybaev
«__» _____2022

«AFFIRM»
Chairman of the Management Board-Rector

_____ Dulatbekov N. O.
«__» _____2022

EDUCATIONAL PROGRAM

«7M11301- Organization of transportation, traffic and operation of transport »
Level: Master's Degree

Karaganda, 2022

The educational program in the direction of training 7M11301- Organization of transportation, traffic and operation of transport is developed on the basis of:

- * The Law of the Republic of Kazakhstan dated July 27, 2007 No. 319-III "On Education"
- * Law of the Republic of Kazakhstan No. 151-I of 11 July 1997. "On languages in the Republic of Kazakhstan"
- • State Mandatory Standard of Higher Education No. 604 of October 31, 2018
- * The National Qualifications Framework of March 16, 2016 by the Republican Tripartite Commission on Social Partnership and Regulation of Social and Labor Relations
- * Order of the Ministry of Education and Science of the Republic of Kazakhstan "On Approval of the Rules for organizing the educational process in credit Technology" dated October 2, 2018 No. 152
- * Classifier of training directions for personnel with higher and postgraduate education No. 569 of October 13, 2018.

* Professional standard "Control over the technical condition of road transport" (Appendix No. 3 to the Order of the Chairman of the Board of the National Chamber of Entrepreneurs of the Republic of Kazakhstan "Atameken" dated September 6, 2018 No. 239).

1. Passport of the educational program

1.1 General information about the educational program

1. Code and name of the educational program: 7M11301- Organization of transportation, traffic and operation of transport

2. Code and classification of the field of education, areas of training: 7M11 Services

3. Group of educational programs: M113 - Transport services

4. The amount of credits – 120

5. Form of study: full-time

6. Language of instruction: Kazakh, Russian, English

7. Degree awarded: Master of Technical Sciences

8. Type of OP: current

9. ISCED level (International Standard Classification of Education) – Level 7

10. Level of NQF (National Qualifications Framework) – Level 7

11. ORC level (Industry Qualifications Framework) – Level 7

12. Distinctive features of OP: no

13. Number of the appendix to the license for the direction of personnel training: KZ83LAA00018495 dated 07/28/2020, appendix 016

14. The name of the accreditation body and the validity period of the accreditation of the OP:

15. The purpose of the OP: Training of masters with in-depth knowledge in the field of traffic management, expert assessment of road accidents, transportation, logistics process management, forecasting and development of transport systems

16. Qualification characteristics of the graduate

a) List of graduate positions

A graduate of the Master's degree is awarded a master's degree in the field of services under the educational program "7M11301 – Organization of transportation, traffic and operation of transport". Qualifications and positions: specialist in the transport and logistics industry; employee of design and research institutions; head of the freight forwarding service; inspector of the state institution of highways and passenger transportation; railway station employee, researcher and teacher in organizations of higher and professional education.

b) The scope and objects of professional activity of the graduate

Scientific-research, scientific-production, design organizations; educational institutions of higher and vocational education

c) Types of professional activity of the graduate:

- educational (educational, pedagogical);
- scientific research;
- organizational and managerial;
- production and management;
- project.

d) Functions of the graduate's professional activity:

- pedagogical;
- research;
- social and communicative.

Form 2

17. Formulation of learning outcomes based on the competencies of the EP "7M11301- Organization of transportation, traffic and operation of transport "

Types of competencies	Learning result code	Learning outcomes (according to Bloom's taxonomy)
1. Behavioral skills and personal qualities: (Soft skills)	RO1	Analyzes methodological problems that arise when solving research and practical tasks, including in interdisciplinary fields; when revaluing accumulated experience; organizing higher education; solves scientific and research tasks. Analyzes, processes, summarizes and reproduces technical and economic information in a foreign language and with the documentation support of the transportation process
	RO 2	Summarizes the knowledge of modern science and philosophy of science, contributing to the implementation of the main directions of modernization of public consciousness. Uses techniques and methods of planning, management of the transportation process in accordance with the requirements of regulatory documents
	RO 3	Interprets information to form judgments taking into account social, ethical and scientific considerations when analyzing the results of a scientific experiment and modeling transportation, using appropriate processing methods and tools.
	RO 4	Designs logistics systems, organizes and manages the road-exluation process, calculates and defines standards for ensuring the safety of the transportation process and transport.
2. Digital competencies: (Digital skills):	RO 5	Uses digital technologies, intelligent transport systems in the development of strategic and operational transport tasks, modeling of transport and logistics systems. Makes technical and economic analysis and makes engineering and management decisions in the organization of traffic using digital technologies
	RO 6	Designs the transportation process and conditions of safe road traffic using modern information technologies, research methods; forms databases for automated control systems for the organization of the transportation process
3. Professional competencies:	RO 7	Applies technologies of commercialization of the results of scientific research. Conducts a search for patent information sources, prepares materials for patenting inventions; determines technical regulations and conditions, the procedure for application
	RO 8	Uses computational methods, forms of interaction of various modes of transport in solving problems of modeling cargo and passenger transportation. Fulfills the regulatory requirements for the operation of rolling stock in the organization of the transportation process
	RO 9	Solves the tasks of ensuring road safety and carries out an expert assessment of road accidents.

Form 3

18. Determination of discipline modules in accordance with the results of the training of the EP "7M11301- Organization of transportation, traffic and operation of transport "

Learning result code	Module Name	Discipline Name	Volume (ECTS)
1	2	4	
RO 1, RO 2	Philosophical and historical aspects of teaching in higher education	History and philosophy of science	4
		Higher school pedagogy	4
		Management Psychology	4
		Pedagogical practice	4
RO1,	Professional languages	Foreign language (non-professional)	**4**
RO1, RO3, RO4, RO7	Innovative development of the transport industry	Professional foreign terminology in road transport Documentation of the transportation process	4
		Commercialization of the results of scientific and scientific-technical activities Fundamentals of patenting	6
		Innovative methods of scientific research in the organization of traffic Methods of scientific research in the organization of the transportation process	5
RO4, RO5, RO6, RO8	Logistics process management	Cargo transportation modeling	4
		Passenger transportation modeling	6
		Digital technologies in logistics systems Organization of spatial identification of vehicles	4
		Optimization of transport tasks in road transport Transportation logistics	5
RO6, RO7, RO8, RO9	Transport safety	Legal aspects of the organization of transportation Technical regulations for the organization of transportation	5
		Organization of road safety services Design and organization of road maintenance works	5
		Methods and means of ensuring transport safety Ensuring the safety of the transportation process	6
RO1, RO3, RO4, RO7	Research practice	Research practice	14
RO5, RO6, RO8, RO9	Research work	Research work of a master's student, including internship and completion of a master's thesis (NIRM)	24
RO1 RO5, RO6, RO8, RO9,	Final certification	Preparation and defense of a master's thesis	12

19.Matrix of achievability of learning outcomes

NN п/п	Discipline Name	Brief description of the discipline (30-50 words)	Number of credits	Generated learning outcomes (codes)								
				RO1	RO2	RO3	RO4	RO5	RO6	RO7	RO8	RO9
D1	History and philosophy of science	Philosophy and worldview. Scientific, philosophical, religious worldview. The correlation of mythology, religion and philosophy. The role of myths in social development. Philosophy as a special type of knowledge and a special type of spiritual activity. Brief description of the main sections of philosophy – ontology, epistemology, philosophical anthropology, logic, ethics, aesthetics, social and political philosophy. The ambiguity of definitions, forms and directions of philosophy and the variety of ways of philosophizing. Philosophy and the philosopher in the life of man and society. The role of philosophy in the implementation of the third modernization of modern Kazakhstan.	4	+								
D2	Higher school pedagogy	Higher school pedagogy as a science. The relationship of higher school pedagogy with other sciences. The role of education in the modern world. Theoretical aspects of education. Didactics in higher school pedagogy. The concept and meaning of the teaching method. Organization of higher education and its forms. The concept of learning technology. Innovative technologies in the organization of training.	4	+								
D3	Management Psychology	Psychology of management. Subject and principles. Management functions. Motivation to work. Psychology of group behavior in an organization. Methods of effective management. Features of managerial decision-making. The influence of psychological factors in decision-making. Identification of psychological problems. Strategy and tactics of solving managerial tasks. Leadership and leadership in management psychology. Interpersonal communication and communication psychology. Efficiency and competitiveness of modern organizations.	4	+	+							
D4	Pedagogical practice	Study of the work program of the discipline of a scientific specialty. Preparation of notes on the methodology of conducting lectures and seminars. Participation in the development of work programs of disciplines of a scientific specialty. Conducting training sessions in an academic group in agreement with the teacher of the discipline. Educational work: study of the specifics of the curator's work, development of a schedule of educational work, preparation, conduct and analysis of the results of educational work.	4	+								
D5	Foreign language (professional)	Four speech actions (reading, speaking, listening and writing) in accordance with the qualification levels A2, B1, B2, C1, perception of the meaning of words in essence; creating your own version of writing messages, monologue / dialogue, etc. Types of oral and written communication: description, narration, reasoning, message, reasoning. Types of speech utterances: explanation, definition, evaluation, summary, interpretation, comment. Types of written speech works: CV, telefax, official letter, abstracts, essays.		+								

D6	Documentation of the transportation process	The subject, tasks and structure of the discipline. Basic concepts and definitions in the field of documentation of the transportation process. Regulatory and legal bases of the organization of transportation. The purpose and role of the regulatory and methodological framework. Unification and standardization of documentation in transportation. Automation of documentation support of the transportation process. Information and reference documents.	4	+								
	Professional foreign terminology in road transport	Foreign terminology in transport. The term and definition of terminological concepts. The concept of the structure of terminology. The concept, the essence of foreign terminology in the operation of transport. Functions and features of foreign terminology in the organization of the transportation process. Information and reference, information and organizational, information and administrative documents in a foreign language		+								
D7	Fundamentals of patenting	Exclusive rights and their development. Intellectual property law. The subject, system and sources of patent law. Sources of domestic, foreign, and international patent law: laws, regulations of government bodies, administrative and judicial practice. Patent law of the Republic of Kazakhstan. Registration of patent rights. Protection of patent rights.	6							+		
	Commercialization of the results of scientific and scientific-technical activities	Regulatory and legal regulation of the results of commercialization of intellectual activity. Types of legal facts preceding the conclusion of contracts in the field of intellectual property. Types of license agreements. International agreements in the field of intellectual property protection. Types of means of individualization. Collective trademark. Features of license agreements, commercial concession agreement. principles and system of copyright, sources of legal regulation of issues of copyright and related rights protection.								+		
D8	Innovative methods of scientific research in the organization of traffic	Basic concepts of experiment planning. Processing of the experiment results. Evaluation of the exact results of the experiment. Regression analysis. Fundamentals of the theory of experiment planning. The plan of a complete factorial experiment (PFE) of type 2k. Complete factorial experiment: planning matrix, experiment properties, estimates of response function coefficients. Fractional factorial experiment. Robust experiment planning.	5		+	+						
	Methods of scientific research in the organization of the transportation process	Science and other forms of mastering reality. Goals and objectives of science. Science and its classification. Scientific research and its methodology. Research work: complex problems, topics, questions. Types and stages of research work. Forms of expression of scientific novelty and its elements. Economic efficiency and forms of its expression. Master's thesis: goals, objectives, compliance criteria, requirements for content and design. Organization of scientific research in the Republic of Kazakhstan.			+	+						
D9	Cargo transportation modeling	Classification of cargo transportation routing tasks. Mathematical formulation and algorithm for solving the problem of optimizing idle rides. Building a system of circular routes in a graphical way. The algorithm of the method of combined matrices and relationship tables. Routing of cargo transportation, taking into account the supply and return of rolling stock of transport enterprises. Securing routes for transport companies in the presence and absence of restrictions on the number of cars.	4			+	+					

D10	Passenger transportation modeling	Passenger transportation technologies. Passenger transportation management structure. Characteristics of technical support of passenger transportation in long-distance, local and suburban traffic. The main technical, technological and economic indicators of passenger transportation. Technical and operational indicators of vehicles for passenger transportation. - the main issues of the organization of the movement of long-distance, local and suburban trains and buses. Passenger traffic management system, requirements for technical means providing it;	6			+	+					
D11	Digital technologies in logistics systems	Fundamentals of digitalization of economy and transport: terminology, state, prospects. Regulatory and legal regulation of the process of digitalization of the economy and transport. Modern software and hardware means of digitalization. Digital technologies in transport. Key directions of the process of digitalization of the transport sector: digitalization of transport infrastructure and logistics chains (including warehousing and service centers); robotization of production processes; large-scale automation, including management processes; introduction of autopilot systems	4			+	+					
	Organization of spatial identification of vehicles	Architecture of intelligent transport systems. The current level of development of ITS regions, cities. World experience of ITS formation and development. Modern software and hardware components of ITS. Features of modern traffic management systems. ITS in ensuring the organization and safety of road traffic, road condition monitoring, information technology complexes				+	+					
D12	Optimization of transport tasks in road transport	Optimization of transport costs in the field of road freight transportation with the use of marketing and logistics tools. The main types of costs characteristic of the process of transportation of raw materials, finished goods or personnel: Loading/unloading costs, as well as delivery of goods to a point of sale. Expenses for the operation, maintenance and overhaul of the vehicle. Fuel costs. Remuneration of drivers, mechanics, freight forwarders. Payment of taxes, duties, customs duties. The cost of travel on toll roads.	5				+	+				
	Transportation logistics	Construction of a logistics scheme: selection of suitable transport; determination of the method of transportation; choice of companions; route construction; organization of a continuous process; optimization of all components. The method of moving goods; the choice of the type of vehicle and its specific model; the selection of the carrier company and other logistics intermediaries; the layout of the company's warehouse terminals.					+	+				
D13	Legal aspects of the organization of transportation	Legal regulation of labor relations. Material and disciplinary responsibility of employees and employers. Labor protection. Contracts and transactions. The concept of an economic contract, its essence. Classification of contracts. The concept of transactions. The difference between a transaction and a contract. Invalid and void transactions. Business customs. Detailed consideration of the contract of sale, contract of carriage of goods, contract for the performance of maintenance and repair of rolling stock vehicles.	5		+		+					
	Technical regulations for the organization of transportation	Legislative documents regulating the conditions and rules of transportation, duties, rights and responsibilities of transport organizations, enterprises, institutions and citizens using transport. The procedure for drawing up and executing the plan and the basic conditions for the transportation of goods, baggage and mail, as well as the relationship of transport organizations between themselves and consumers of products. The procedure for organizing the transportation of various types of goods by road, ensuring the safety of goods, vehicles and containers.			+		+					
D14	Organization of road safety services	Regulatory and legal regulation in the field of road safety; organization and tasks of traffic safety services; characteristics of the main directions for improving the reliability of the driving staff of transport enterprises; medical support for employ-	6									+

		ees of the enterprise; accident analysis and official investigation of road accidents										
	Design and organization of road maintenance works	Management of the production program of the road organization, including the stages: the formation of the program, the distribution of work by months of the year, the preparation of calendar schedules for the logistics of road maintenance work. Calculation of resource requirements (machines, materials, labor costs, transport, money) with the use of specialized software, drawing up a plan for resource needs during the year, comparing available resources and the need for them for the production of work according to a given program.					+					
D15	Methods and means of ensuring transport safety	The procedure for the supervision of traffic safety in transport. The main areas of activity for ensuring traffic safety in road transport.The main areas of activity for ensuring traffic safety in railway transport. The main areas of activity for ensuring traffic safety on river transport (navigation on inland waterways.). The main areas of activity for ensuring traffic safety in air transport. The main areas of activity for ensuring traffic safety in maritime transport.	5									+
	Ensuring the safety of the transportation process	Organization of the work of the traffic safety service of vehicles in the implementation of special transportation. Certification and licensing of passenger transportation services by road. The procedure for obtaining permits for the transportation of dangerous goods. Requirements for the technical condition and equipment of vehicles (carrying dangerous goods. Cargo and passenger insurance: for air transportation, road transportation, water and rail transportation.									+	+

20. Coordination of planned learning outcomes with teaching methods

Learning outcomes	Planned learning outcomes for the module	Learning methods	Assessment methods
RO1	Analyzes methodological problems that arise when solving research and practical tasks, including in interdisciplinary fields; when revaluing accumulated experience; organizing higher education; solves scientific and research tasks. Analyzes, processes, summarizes and reproduces technical and economic information in a foreign language and with the documentation support of the transportation process	Interactive lecture	test
RO2	Summarizes the knowledge of modern science and philosophy of science, contributing to the implementation of the main directions of modernization of public consciousness. Uses techniques and methods of planning, management of the transportation process in accordance with the requirements of regulatory documents	Interactive lecture	test
RO3	Interprets information to form judgments taking into account social, ethical and scientific considerations when analyzing the results of a scientific experiment and modeling transportation, using appropriate processing methods and tools.	Case methods	Test, presentations
RO4	Designs logistics systems, organizes and manages the road-exluation process, calculates and defines standards for ensuring the safety of the transportation process and transport.	Interactive lecture, Case methods	Test, presentations
RO5	Uses digital technologies, intelligent transport systems in the development of strategic and operational transport tasks, modeling of transport and logistics systems. Makes technical and economic analysis and makes engineering and management decisions in the organization of traffic using digital technologies	Discussions	Project preparation
RO6	Designs the transportation process and conditions of safe road traffic using modern information technologies, research methods; forms databases for automated control systems for the organization of the transportation process	Interactive lecture	Test, presentations
RO7	Applies technologies of commercialization of the results of scientific research. Conducts a search for patent information sources, prepares materials for patenting inventions; determines technical regulations and conditions, the procedure for application	Case methods	Test, presentations
RO8	Uses computational methods, forms of interaction of various modes of transport in solving problems of modeling cargo and passenger transportation. Fulfills the regulatory requirements for the operation of rolling stock in the organization of the transportation process	Interactive lecture, Case methods	Test, project preparation
RO9	Solves the tasks of ensuring road safety and carries out an expert assessment of road accidents.	Interactive lecture	Test, project preparation

21. Graduate model

Attributes of the graduate:
- has deep scientific knowledge in the field of solving transport and technological problems;
- emotional intelligence;
- adaptability to global challenges;
- leadership;
- organizational skills;
- understanding the importance of the principles and culture of academic integrity.

Types of competencies	Description of competencies
1. Behavioral skills and personal qualities: (Soft skills)	Understands methodological problems that arise when solving research and practical tasks, aspects of the organization of the transportation process and road traffic. I am ready for the scientific organization of professional activity and to solve professional problems in a foreign language environment
2. Digital competencies: (Digital skills):	Uses digital technologies, intelligent transport systems in the development of strategic and operational transport tasks; modeling of transportation and logistics systems. Designs the transportation process and safe road traffic conditions using modern information technologies
3. Professional competencies:	He knows the methods of modeling transportation and ensuring safe road traffic. A scientific approach and logical thinking have been formed in assessing road accidents and transport safety

Developers:
Members of the working group:
Professor, Ph.D. _____ G.O.Tazhigulova
Director of Bus Park No. 2 LLP, Karaganda" _____ G.M. Zhaksybaev
Senior lecturer, Candidate of Technical Sciences _____ G.E.Abdullayeva
Senior lecturer, M.Sc. _____ I.M.Kamzabekov
1st year Master's student _____ P.U. Baigozhina

The educational program was reviewed and recommended by the Faculty Council from 20.03.22 Protocol No. 8
The educational program was reviewed at the meeting of the Academic Council from 28.04.22 Protocol No. 5
The educational program was reviewed and approved at the meeting of the University Board from 16.04.22 Protocol No. 12

Member of the Board - Vice-Rector for Academic Affairs T.Z.Zhusipbek

Director of the Department for Academic Work G.S.Akybayeva

Dean of the Faculty of Physics and Technology A.K.Zeinidenov