



**School of transport engineering and logistics named after M. Tynyshpayev  
Department of "Logistics"**

**EDUCATIONAL PROGRAM**

**7M11301 Transport services**

**Code and name of educational program**

Code and classification of the field of education: 7M11Services

Code and classification of training directions: 7M113 Transport services

Group of educational programs: M151 Transport services

Level based on NQF: 7

Level based on IQF: 7

Study period: 2

Amount of credits: 120

**Almaty 2024**

Educational program 7M11301 Transport services  
code and name of educational program

was approved at the meeting of K.I. Satbayev KazNRTU Academic Council

Protocol № 3 dated «27» 10 2022.

was reviewed and recommended for approval at the meeting of K.I. Satbayev  
KazNRTU Educational and Methodological Council

Protocol № 2 dated «21» 10 2022 .



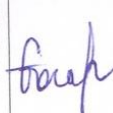




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Educational program 7M11301 Transport services

code and name of educational program

was developed by Academic committee based on direction «7M113 Transport services»




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## List of abbreviations and designations

EP - educational program

NRK - National Qualification Framework

IRK - Industry Qualification Framework

### 1. Description of educational program

EP «7M11301-Transport services» was developed in accordance with the standards of postgraduate education. Upon completion of the program, undergraduates will be in-demand specialists in the transport services market.

### 2. Purpose and objectives of educational program

**Purpose of EP:** Training of qualified scientific and pedagogical personnel in the field of transport services, capable of solving scientific and practical problems in professional activities and making managerial decisions using innovative technologies.

**Tasks of EP:**

- organization of the educational process corresponding to the international standards of postgraduate education for the educational process;
- training of scientific personnel with the competencies of a competitive specialist in the field of transport services;
- creating conditions for academic mobility of undergraduates;
- providing students with access to the advanced achievements of scientific and practical thought in the field of transport services;
- formation of modern specialists capable of strategic forecasting of transport processes, both national and international scale.

### 3. Requirements for evaluating the educational program learning outcomes

### 4. Passport of educational program

#### 4.1. General information

№	Field name	Comments
1	Code and classification of the field of education	7M11Services
2	Code and classification of training directions	7M113 Transport services
3	Educational program group	M151 Transport servis
4	Educational program name	7M11301Transport services
5	Short description of educational program	EP «7M11301-Transport services» was developed in accordance with the standards of postgraduate education. Upon completion of the program, undergraduates will be in-demand

		specialists in the transport services market.
6	Purpose of EP	Training of qualified scientific and pedagogical personnel in the field of transport services, capable of solving scientific and practical problems in professional activities and making managerial decisions using innovative technologies.
7	Type of EP	New EP
8	The level based on NQF	7
9	The level based on IQF	7
10	Distinctive features of EP	No
11	List of competencies of educational program	<ul style="list-style-type: none"> <li>- the ability to identify patterns and trends in the development of scientific thought based on the synthesis of disciplinary and interdisciplinary areas for conducting complex research;</li> <li>- the ability to apply scientific approaches, knowledge and ideas in the field of transport systems based on the use of research results, modern methodology, trends in their development;</li> <li>- have the skills to develop functional systems for the implementation of investment projects in transport systems;</li> <li>- the ability to apply new tools to ensure the transparency of supply chains and analytical solutions and technologies to facilitate the automation of processes and improve the operational efficiency of industrial companies;</li> <li>- the ability to systematically and differentially use the tools of economic, mathematical, statistical and other methods to solve various theoretical and practical problems in the design.</li> </ul>
12	Learning outcomes of educational program	<p>1. Knows the technical characteristics and features of vehicles, machinery and equipment for research.</p> <p>2. Uses methods of mathematical and simulation modeling, technology of business games for making optimal decisions in studies of transport and logistics processes.</p> <p>3. Conducts research on transport and logistics facilities and processes, evaluates the results of analysis and reasonably make scientific decisions.</p> <p>4. Applies automatic design programs for the design of transport facilities and</p>

		<p>tools in research projects.</p> <p>5. Uses modern transport technologies and equipment to carry out design and calculation tasks for transport facilities.</p> <p>6. Applies fundamental and applied knowledge in a practical environment in the study of transport, transport services and logistics functions</p> <p>7. Applies methods in the field of psychology and pedagogy and legal norms of intellectual property protection in scientific, pedagogical and research activities, has a philosophical outlook.</p> <p>8. Applies new innovative technologies in the management of transport processes and services in order to ensure the safety of the provision of transport services, increase the efficiency of use of material, technical, financial and information resources.</p> <p>9. Solves the problems of designing transport networks and transport and logistics infrastructure using information technology.</p> <p>10. Finds relevant information in English to identify and analyze problems, conduct scientific research in the scientific field</p> <p>11. Develops individual stages of technological processes to ensure the safety of personnel, the transportation process, the operation of vehicles and the movement of material flow in the supply chain.</p> <p>12. Applies research methods and sustainable development strategies to conduct research in their professional activities, identify problems in the field of sustainable logistics, transport and transport services management.</p> <p>13. Develops complex tasks in the field of transport infrastructure, supply chain, interaction of different modes of transport, transport along international transport corridors, selects and evaluates the necessary information to solve the tasks set.</p>
13	Education form	full-time
14	Period of training	2
15	Amount of credits	120
16	Languages of instruction	kazakh russian
17	Academic degree awarded	Master of Science in the field of



		services under OP «7M11301-Transport services»
18	Developer(s) and authors	Mukhanova Gulmira Samudinovna

## 4.2. Relationship between the achievability of the formed learning outcomes based on educational program and academic disciplines

№	Discipline name	Short description of discipline	Amount of credits	Generated learning outcomes (codes)													
				PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PO13	PO14
Cycle of basic education disciplines University component																	
1	English language (professional)	The course is designed for undergraduates of technical specialties to improve and develop foreign language communication skills in professional and academic fields. The course introduces students to the general principles of professional and academic intercultural oral and written communication using modern pedagogical technologies.	5										v				
2	History and philosophy of science	The subject of philosophy of science, dynamics of science, specifics of science, science and pre-science, antiquity and the formation of theoretical science, the main stages of the historical development of science, features of classical science, non-classical and post-non-classical science, philosophy of mathematics, physics, engineering and	3							v							

		technology, specifics of engineering sciences, ethics of science, social and moral responsibility of a scientist and engineer.														
3	Higher school pedagogy	Undergraduates will master the methodological and theoretical foundations of higher school pedagogy, plan and organize the processes of teaching and upbringing, master the communicative technologies of subject-subject interaction between a teacher and a master in the educational process of a university.	3							v						
4	Psychology of management	The discipline studies the modern role and content of psychological aspects in managerial activity. The improvement of the psychological literacy of the student in the process of implementing professional activities is considered. Self-improvement in the field of psychology and studying the composition and structure of management activities, both at the local level and abroad. The psychological feature of modern managers is considered.	3							v						

Cycle of basic disciplines Component of choice														
5	Automated systems for solving logistics problems	The purpose of the discipline is the acquisition of skills for solving logistics problems by undergraduates using automated systems.. Specialized logistics company management software. Features of the implementation of the KANBAN system. MySAP Buisness Suite e-business platform. Integrated SAP NetWeaver integration platform. Logistics software based on the SAP platform. Automated SAP platform technologies for Supply Chain Management (SCM) and Customer Ralationship Management (CRM).	5		v	v					v	v		
6	Analysis and forecasting of traffic flows	Purpose: to form a complex of theoretical knowledge of the basics of system analysis and forecasting of traffic flows and systems. After completing the course, the Master student should demonstrate the ability to analyse and forecast traffic flows. The Master student should know quantitative and qualitative methods of forecasting traffic flows; be	5		v	v								

		able to: - determine the indicators of transport systems for analysis; - apply the methods of analysis in practice; - apply methods of transport flows forecasting. Contents: Main characteristics of transport systems. Characteristics of freight flows. Existing approaches to traffic flow analysis. Models and methods of analysis and forecasting of traffic flows; time series and forecasting methods in research.														
7	Information support systems for design, manufacture and maintenance of ground transport and technological machines	Existing information systems for the design, production and operation of machinery and equipment. Information model of the life cycle of mechanical engineering products. Information technology CALS. ISO standards in the field of information technology. Implementation of CALS information support system products in the production process of designing and manufacturing machines. Prospects for the development of information technologies in the systems of production and operation of transport and technological	5				v				v	v				

		machines.														
8	Sustainable development strategies	Purpose: To train graduate students in sustainable development strategies to achieve a balance between economic growth, social responsibility, and environmental protection. Content: Graduate students will study the concepts and principles of sustainable development, the development and implementation of sustainable development strategies, the evaluation of their effectiveness, and international standards and best practices. Cases and examples of successful sustainable development strategies are included.	5												v	
9	Research methodology	The course is aimed at studying the laws, principles, concepts, terminology, content, specific features of the organization and management of scientific research using modern methods of scientometry. In the course of training, undergraduates will be able to choose methods of planning and organizing scientific research. They will study and	5					v							v	

		master the mechanism of scientific search, analysis, conducting experiments, organizing surveys, compiling questionnaires, standards and regulations for the registration of research results. Gain skills in the preparation and execution of documents for scientific projects, reports, publications for seminars and conferences.														
10	Intellectual property and research	The purpose of this course is to provide undergraduates with the knowledge and skills necessary to understand, protect and manage intellectual property (IP) in the context of scientific research and innovation. The course is aimed at training specialists who can effectively work with IP, protect the results of scientific research and apply them in practice.	5		v				v							
11	Modern problems of transport science, engineering and technology	The course provides for the study of the history and methodology of transport science, basic research methods of transport systems, research methods in the field of transport science, engineering and technology. Modern trends and trends in	5		v			v								

		the study of science and technology are being studied, and they will focus on specific problems of transport science. Methods of solving optimization problems of transport systems management, application of mathematical statistics in optimization of transport processes, modeling of transportation and operational processes in transport are considered. Methods of planning and organization of scientific research are given.														
12	Theory of transport processes and systems	The discipline will be studied. The classification of traffic. Features of the transport sphere of material production. Transport processes. Measuring instruments of transportation process. transport process cycle. The main technical and operational parameters of the transport process. Functional motor systems delivery. Modeling of the transport network. The concept of the graph. Model transport network.	5		v			v					v			
<b>Cycle of profile disciplines University component</b>																
13	International transportation	The following are the most	5											v		



	corridors	important aspects of KCM: KCM, KCM logistics infrastructure and innovative logistics technology. The following topics: KKM: Kizmetty taldau, problems and perspectives. BCC is an important aspect. It is necessary to use intermodal and multimodal technologies. Doing so may cause damage to the logistics infrastructure. KKM and KR. doing so may result in damage to the economy. Doing so may cause the student to fall asleep or to fall asleep, and may result in fire or electric shock.														
14	Logistic tasks modeling	The aim of the discipline is to form a theoretical basis of master students' knowledge of models and methods of mathematical and simulation modelling. After completing the course a Master student should know the stages of modelling, mathematical methods of solving problems in logistics, the basics of conceptual and simulation modelling; be able to build mathematical models of logistics problems, determine the methods of their solutions	5		v											

		and find optimal solutions. Content of the discipline: Mathematical models and methods in logistics processes. Economic-mathematical models and methods of solving problems in the management of production, transport and logistics processes, processes of storage, distribution of resources and product sales. Theoretical foundations and methods of solving applied problems in logistics and organization of transport services. Stages of simulation modelling. Building a conceptual model.														
15	Modern transportation technologies in supply chains	Information means of transport control. Extensive and intensive development in the field of logistics. Indicators for assessing the technological resource of a country or enterprise. Investing in innovation. Technique and technology of logistics. Characteristics and basic directions of the development of science. Application of scientific achievements in logistics - nanotechnology, control	5	v			v		v							

		systems with artificial intelligence, new means of communication and energy transfer. Prediction of the development of logistics infrastructure.														
16	Strategic logistics cost management	The purpose of the discipline is to study the content of logistics costs and ways to reduce them to increase the company's competitiveness. After completing the course, the undergraduate must know the content of logistics costs and their classification; be able to keep track of logistics costs; have the skills to make decisions to reduce logistics costs. Discipline content: Information on the qualitative and quantitative content of logistics costs. Types of classification of logistics costs. Division of logistics costs according to the areas of activity of the enterprise. Complete and abbreviated cost accounting. Cost accounting in space and time. The reliability of the information base. Planning, accounting and opportunities to reduce logistics costs. Strategic management of logistics costs	5								v					

		as a means of increasing the competitiveness of an enterprise. Accounting for logistics costs by function: a) management, b) transportation, c) maintenance and maintenance of stocks at procurement and storage, production and sales and distribution stages. Forecast of sales volume using mathematical and statistical methods, taking into account the inflation factor. Construction of a regression-correlation model of the dependence of sales volume and costs of management, transportation, maintenance and maintenance of stocks. Determination of the total reduced costs and the minimum value of the total costs.														
<b>Cycle of profile disciplines Component of choice</b>																
17	Innovative Technology in Logistics	The purpose of the discipline is to study modern technologies in logistics for use in professional activities. Logistics is a methodological basis for the integration of information in supply chain management processes. The	5								v					

		digital economy is the new global paradigm for managing economic processes. Changes in logistics under the influence of the digital economy. Digital Logistics. Concepts, terms and definitions of digital logistics. Logistics and building a unified information environment in supply chain management processes. Regulatory aspects of digital logistics. Paperless electronic document management in logistics. Digital transformation, reengineering and logistics. “Cross-cutting” technologies of digital logistics: the use of distributed registry technologies (“blockchain”) in the management of supply chain logistics; BigDat technologies in logistics; global navigation, satellite communications and on-board supply control systems in logistics; bar and radio frequency (RFID) identification; “Internet of things” in logistics; artificial intelligence, robotics, unmanned vehicles, intelligent information control systems in logistics. Virtual logistics														
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		operator and cloud information technology.														
18	Research methodology for the market of transport and logistics services	The purpose of the discipline is the formation of undergraduate skills in conducting research on the market of logistics services based on knowledge of methodological foundations. After completing the course, the undergraduate must know the principles, stages and methodology of the study; be able to apply the methodological foundations of the study of the market of transport and logistics services in professional activities. The content of the discipline: the current state of the world market of transport and logistics services. Problems and existing solutions. Technique and methods of research of the market of transport services. Improving the market of transport and logistics services in the Republic of Kazakhstan. Value Added Services.	5		v	v		v								
19	Supply Chain Modeling	The purpose of the discipline is the formation of undergraduate skills in building conceptual and	5		v						v					

		simulation models of logistics processes and supply chains. After completing the course, the undergraduate should know the stages of building conceptual and simulation models, simulation modeling methods; possess the skills of working in the environment of the AnyLogic simulation package, building simulation models, conducting experiments, processing the results of experiments, making optimal decisions. The content of the discipline: basic concepts and principles of modeling production and logistics processes. The basic concepts of simulation and the construction of a conceptual model. The method of discrete event (process) modeling. Software for modeling in production and logistics. Building simulation models in Anylogic simulation environment. Conducting experiments. Processing of the results of the experiment.														
20	Fundamentals of technical systems performance	Features of the management of technical systems. Fundamentals of industrial operation and maintenance of	5	v				v								

		technical systems of the industry. Reasons for reducing the operability of machines in operation. The effect of lubricants on machine performance. Fatigue of materials of machine elements. Corrosion damage to machine parts. The program for ensuring the operability of technical systems. Fundamentals of the concept of "life cycle of technical systems." Performance assessment of machine elements. The performance of the main elements of technical systems.														
21	Design and management of logistics infrastructure	The content of the discipline: Concepts of the logistics infrastructure, warehousing, storage systems. The basic principles and methods of designing and managing a logistics infrastructure. Modern concepts of an integrated approach to the formation and management of the logistics infrastructure at all levels of decision making. Resource optimization related to the design and operation of the logistics infrastructure. Information management	5				v					v				



		system for the management of logistics infrastructure. Cost structure for the maintenance of logistics infrastructure														
22	Automation systems for road transport	The course examines the theoretical principles and categories of system analysis, general theory of systems, theories of information, methods of system analysis for subsequent use in making technical and managerial decisions used in the creation and operation of information technologies, automated control systems for the schedule of completed traffic, the functional composition of tasks and automated workplaces of technical personnel of a motor transport company, automated systems management, business processes of technological center enterprises, business processes of support in corporate transport service centers.	5	v				v			v					
23	The current state of interaction of all types of transport	The purpose of the discipline is the formation of undergraduate skills in organizing the effective interaction of various types of transport based on the	5								v					

		<p>knowledge of their technical and operational characteristics. After completing the course, the undergraduate should know the methods and modern technologies of transportation by various modes of transport; possess the skills of organizing the transportation process with the participation of various modes of transport; be able to carry out economic calculations of the assessment of the transportation process.</p> <p>Content of the discipline: Functioning of main modes of transport. Interaction of modes of transport in the transportation process, at the points of cargo transshipment, transfer of passengers and in mixed direct transportation. An integrated approach to the organization of transportation on all modes of transport. The choice of the optimal transportation option, methods of interaction between modes of transport. Technical, technological, legal, economic and information spheres of interaction between different modes of transport. Modern</p>															
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		technologies of transportation on various modes of transport. Economic models in the calculation of the assessment of optimal options for the transportation of goods and the infrastructure of transshipment points.														
24	Technical means of the transport system	The discipline systematizes the learner's knowledge about the object of management focused on road transport. The main practical aspects of transport systems studied in the modules: freight and passenger transportation, cargo science, freight forwarding services, general course of transport, etc., contribute to the formation of students' holistic understanding of the work of transport as a system of the transport network and the transport process. General information from the theory of systems is the basis of the study of the discipline.	5	v				v						v		
25	Technological equipment and production and technical infrastructure of enterprises	Technological equipment - an integral part of the PTB of automobile transport enterprises. Lifting and disassembling equipment. Control and diagnostic	5	v				v								

		equipment. Washing and lubricating equipment. Equipment for body repair, paint work. Equipment for maintenance and repair of wheels. The choice of the acquisition and installation of technological equipment. Technical operation of technological equipment. Repair of technological equipment. Metrological and environmental support of process equipment. Trends in the improvement of technological equipment designs.														
26	Sustainable logistics and transport	The purpose of the discipline is to study the direction of research on the creation of a sustainable logistics system and supply chain. After completing the course, the undergraduate should know the basic concepts and principles of a sustainable logistics system; be able to identify problems in the functioning of logistics systems in the field of "Green Logistics"; have the skills to build sustainable logistics systems and supply chains. Discipline content: Applied	5												v	

		aspects of sustainable logistics, supply chain and transport. Analysis of the impact of environmental decisions on logistics systems and transport. Sustainable logistics, closed supply chains, reverse logistics. Sustainable Supply Chain Strategy.														
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## 5. Curriculum of educational program



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**CURRICULUM**  
of Educational Program on enrollment for 2024-2025 academic year  
Educational program 7M11301 - "Transport services"  
Group of Educational programs M151 - Transport services

Form of study: full-time			Duration of study: 2 year			Academic degree: master of science														
Discipline code	Name of disciplines	Cycle	Total amount in credits	Total hours	Classroom amount lect/h/yr	SIS (including TSIS) in hours	Form of control	Allocation of face-to-face training based on courses and semesters												
								1 course		2 course										
								1 semester	2 semester	3 semester	4 semester									
CYCLE OF BASIC DISCIPLINES (BD)																				
M-1. Module of basic training (university component)																				
UNQ213	Foreign language (professional)	BD LC	5	150	2/0/3	105	E	3												
HUM214	Psychology of management	BD LC	3	90	1/0/1	60	E	3												
HUM212	History and philosophy of science	BD LC	3	90	1/0/1	60	E			3										
HUM213	Higher school pedagogy	BD LC	3	90	1/0/1	60	E		3											
component of choice																				
TRA206	Automated systems for solving logistics problems	BD CCH	5	150	2/1/0	105	E	5												
LOG224	Research methods				2/0/1															
MNG781	Intellectual Property and Research				2/0/1															
LOG201	Research methodology	BD CCH	5	150	2/0/1	105	E	5												
TRA203	Modern problems of transport: science, engineering and technology				2/0/1															
LOG200	Automated systems for solving logistics problems	BD CCH	5	150	2/1/0	105	E			5										
TRA205	Information support systems for design, manufacture and maintenance of ground transport and industrialized machines				2/1/0															
MNG782	Sustainable development strategies				2/0/1															
CYCLE OF PROFILE DISCIPLINES (PD)																				
M-2. Module of professional activity (university component, component of choice)																				
LOG234	International transportation corridors	PD LC	5	150	2/0/1	105	E	5												
TRA214	Modern transportation technologies in supply chains	PD LC	5	150	2/0/1	105	E	5												
LOG204	Logistics tasks modeling	PD LC	5	150	2/1/0	105	E		5											
TRA243	Strategic logistics cost management	PD LC	5	150	2/0/1	105	E		5											
component of choice																				
LOG200	Research methodology for the markets of transport and logistics services	PD CCH	5	150	2/0/1	105	E		5											
TRA217	Technical means of the transport system				2/0/1															
TRA225	Sustainable logistics and transport	PD CCH	5	150	2/0/1	105	E			5										
TRA210	Technological equipment and production and technical infrastructure of enterprises				2/0/1															
LOG223	The current state of interaction of all types of transport	PD CCH	5	150	2/0/1	105	E		5											
TRA207	Automation systems for road transport				2/0/1															
TRA226	Design and management of logistics infrastructure	PD CCH	5	150	2/0/1	105	E			5										
TRA213	Fundamentals of technical sciences of				2/0/1															
TRA228	Information Technology in Logistics	PD CCH	5	150	2/1/0	105	E			5										
LOG207	Supply Chain Modeling				2/1/0															
M-3. Practice-oriented module																				
AAP273	Pedagogical practice	BD LC	8							8										
AAP269	Research practice	PD, CCH	8								8									
M-4. Experimental research module																				
AAP208	Research work of a master's student, including internship and completion of a master's thesis	RWMS LC	4					4												
AAP208	Research work of a master's student, including internship and completion of a master's thesis	RWMS LC	4						4											
AAP251	Research work of a master's student, including internship and completion of a master's thesis	RWMS LC	2							2										

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AAP255	Research work of a master's student, including training and completion of a master's thesis	RWMS LC	14								14
<b>M-5. Module of final attestation</b>											
ECAT12	Preparation and defense of a master's thesis	FA	8								8
Total based on UNIVERSITY:										30	30
										40	60

Number of credits for the entire period of study					
Cycle code	Cycles of disciplines	Credits			
			university component (LC)	component of choice (CCH)	Total
BD	Cycle of basic disciplines		20	15	35
PD	Cycle of profile disciplines		28	25	53
	Total for theoretical training:	8	48	45	88
	RWMS				24
FA	Final attestation		12		3
	TOTAL:	12	48	40	120

Decision of the Academic Council of Kazntu named after K.Satbayev, Protocol No 12 - 20.12.2024

Decision of the Educational and Methodological Council of Kazntu named after K.Satbayev, Protocol No 6 - 19.04.2024

Decision of the Academic Council of the School of transport engineering and logistics named after M. Tynyshpayev, Protocol No 4 - 19.03.2024

Vice-Rector for Academic Affairs

R.K. Uskenbayeva

Head of School of transport engineering and logistics named after M. Tynyshpayev

S.S. Abdullayev

Head of educational program School of transport engineering and logistics named after M. Tynyshpayev

G.S. Mukhametova

Specialty Council representative from

S.M. Medetbekov