Institute of Project Management
Department of Logistics

EDUCATIONAL PROGRAM

6B11310 Digital logistics

Code and name of educational program

Code and classification of the field of education: 6B11 service
Code and classification of training directions: 6B113 Transportation services
Group of educational programs: B095 Transportation services
Level based on NQF:**6**
Level based on IQF:**6**
Study period: **4**
Amount of credits: **240**

Almaty 2022

Educational program 6B11310 Digital logistics
code and name of educational program
was approved at the meeting of K.I. Satbayev KazNRTU Academic Council

Minutes №5 __ dated «24» November 2023.

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

Minutes №3 __ dated «17» November 2023.

Educational program 6B11310 Digital logistics
code and name of educational program
was developed by Academic committee based on direction « Digital logistics »

Full name	Academic degree/academic title	Position	Workplace	Signature
Chairperson of Academic Committee				
Mukhanova Gulmira Samudinovna	Candidate of Technical Sciences, Associate Professor	Head of the Department	«Kazakh National Research Technical University Named After K.I.Satbayev», Mobile phone: +77019937718	
Teaching staff				
Bekzhanova Saule Ertaevna	Doctor of technical Sciences, Professor	Professor	«Kazakh National Research Technical University Named After K.I.Satbayev», Mobile phone: +77017994770	
Saltanat Bolatovna	Candidate of Economic Sciences	Assistant Professor	«Kazakh National Research Technical University Named After K.I.Satbayev», Mobile phone: +77057696077	
Tymbaeva Zhazira Muratbekovna	Candidate of Economic Sciences	Associate Professor	«К.И.Сәтбаев «Kazakh National Research Technical University Named After K.I.Satbayev», Mobile phone: +77017867603	
Tyshkanbayeva Mansia Bukarina	Candidate of Physical and Mathematical Sciences, Associate	Associate Professor	«Kazakh National Research Technical University Named After K.I.Satbayev»,	

	Professor		Mobile phone: +77472870472	
Employers				
Gafiatullin Farkhad Taufikovich		Chief business analyst	Daucher Company, Mobile phone: +77772549305	
Medetbekov Serik Muratbekovich		Director	LLC«Turkestan - INVEST» Mobile phone:	
Tulebayev Madiyar		Associate Director	LLC «ZhebeLogistics», Mobile phone: +77073518752	
Students				
Kozhataev Sauran		2nd Year Student	«Kazakh National Research Technical University Named After K.I.Satbayev», Mobile phone: +77788929235	

Table of contents

List of abbreviations and designations

EP - educational program
BC - basic competences
PC - professional competences
LO - learning outcomes
MOOC - Massive Open Online Courses
NQF - National Qualifications Framework
SQF - Sectoral Qualifications Framework

1. Description of educational program

EP 6B11310 "Digital Logistics" regulates educational objectives, expected learning outcomes of students, conditions and technologies of educational process realization, evaluation, and Analysis of cargo flows through the transport corridors of the Republic of Kazakhstan of the quality of students' training.

EP includes the curriculum, description of disciplines, learning outcomes and other materials to ensure quality education of students.

Graduates of this EP in the direction of training 6B113 "Transportation Services" are engaged in:

1) analyzing the state of existing transport systems and networks, transport, and logistics infrastructure;

2) development and implementation of optimal transportation-technological routes of cargo delivery based on the principles of logistics;

3) ensuring safety of transportation process in different conditions.

Professional activity of the graduate of EP 6B11310 "Digital Logistics" is aimed at the implementation of training of specialists in the field of logistics and organization of transportation with the use of advanced technologies.

The graduate of EP 6B11310 "Digital Logistics" can carry out professional activity:

- in transportation companies.
- in warehousing.

The objects of professional activity are:

- organizations and enterprises of public transport engaged in the transportation of passengers, cargo, freight and luggage, provision of infrastructure for use, performance of loading and unloading operations, regardless of their forms of ownership and organizational and legal forms;
- traffic safety services of public and private transport enterprises;
- logistics services of production and trade organizations;
- freight forwarding enterprises and organizations;

- services of the state transport inspection, marketing services and units for the study and maintenance of the transportation services market;

- production and sales systems, organizations and enterprises of information support of production and technological systems; - research and design organizations engaged in activities in the field of development of transport and logistics services, organization and safety of traffic;

- organizations carrying out educational activity on the basic professional educational programs and on the basic programs of professional training.

Subjects of professional activity:

- transportation, organization of multimodal transportation, value added services, warehousing, routing and dispatching.

Types of professional activities

The bachelor who graduated from EP 6B11310 "Digital Logistics" in the direction of training 6B113 "Transportation Services" is prepared for the following types of professional activity:

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

2. Purpose and objectives of educational program

Purpose of EP: According to the Atlas of New Professions and Competences, to train skilled professionals in demand in the labour market who are able to identify and take decisions in logistics and enterprise supply chain management through the use of modern digital technologies and information systems**.**

EP objectives:

Objective 1: Preparation of a graduate for the development of spiritual values, moral and ethical standards of personality as a member of society, fulfillment of the

legal and legislative system of the Republic of Kazakhstan with a high level of professional culture and civic position;

Objective 2: Preparation of a graduate for activity on constant self-improvement and self-development, mastering of new knowledge, skills and abilities in innovative directions in the field of logistics and organization of transportation;

Objective 3: Preparation of a graduate with acquired competencies to perform calculations in the field of transport and material flows management, participation in the development of technical assignments for topographic-geodetic, aerospace, cartographic works in the field to solve land management on the basis of modern training material and technical base;

Objective 4: Preparation of a graduate, based on the diversity and dynamism of the catalog of elective disciplines of the curriculum, with the predominance of practical skills in the competencies, capable of carrying out professional functions within one or more types of activities on the basis of the final results of training, taking into account the specifics of these activities, market requirements for organizational - managerial, professional competencies;

Objective 5: Preparation of a graduate as a competitive specialist in the field of land surveying and cadastre, including on the basis of increasing the international aspect in educational, scientific programs, competent in the field of advanced technologies of land surveying and cadastre implementation, and registration of the results of scientific research.

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

The educational program is developed in accordance with the State obligatory standards of higher and postgraduate education, approved by the order of the Minister of Science and Higher Education of the Republic of Kazakhstan from July 20, 2022 № 2 (registered in the Register of state registration of normative legal acts under № 28916) and reflects the learning outcomes, on the basis of which are developed curricula (work study plans, individual study plans of students) and work study programs for disciplines (syllabus). Mastering of disciplines not less than 10% of the total volume of credits of the educational program with the use of MOOCs on the official platform https://polytechonline.kz/cabinet/login/index.php/.

Assessment of learning outcomes is conducted by developed test tasks within the educational program in accordance with the requirements of the state compulsory standard of higher and postgraduate education.

During the assessment of learning outcomes for students are created uniform conditions and equal opportunities to demonstrate the level of their knowledge, skills and abilities.

When conducting interim certification in online form, online proctoring is applied.

4. Passport of educational program

4.1. General information

№	Field name	Comments
1	Code and classification of the field of education	6B11 Services
2	Code and classification of training directions	6B113Transportation services
3	Educational program group	B095Transportation services
4	Educational program name	6B11310 Digital logistics
5	Short description of educational program	EP 6B11310-Digital logistics defines program educational objectives, student learning outcomes, necessary conditions, content and technologies for the implementation of the educational process, evaluation and analysis of the quality of students during training and after graduation. The EP includes the curriculum, content of disciplines, learning outcomes and other materials to ensure quality education of students.
6	Purpose of EP	According to the Atlas of New Professions and Competences, to train skilled professionals in demand in the labour market who are able to identify and take decisions in logistics and enterprise supply chain management through the use of modern digital technologies and information systems.
7	Type of EP	New EP
8	The level based on NQF	6
9	The level based on IQF	6
10	Distinctive features of EP	No
11	List of competencies of educational program	B - Basic knowledge, skills and abilities B1 - Possession of basic knowledge in the field of natural science (social, humanitarian, economic) disciplines, contributing to the formation of a highly educated person with a broad outlook and culture of thinking; B2 - Possession of skills of handling modern technology, ability to use information technologies in the sphere of professional activity; B3 - Possession of skills of acquisition of new knowledge necessary for daily professional activity and further education in the magistracy; B4 - Possession of one of the languages of the far abroad at the level not lower than the spoken one; B5 - Possession of basic knowledge in the field of general theoretical disciplines, contributing to the formation of the foundations of a scientific worldview, the development of logical thinking, the ability to analyze physical processes, the ability and willingness to participate in the development of modern theoretical and experimental research methods; P - Professional competencies: P1 - a wide range of theoretical and practical knowledge in the professional field;

		P2 - readiness to participate in the team of performers in the development of transportation and transport-logistic processes, their elements and technological documentation; P3 - ability to choose transportation and transport-technological machines and equipment of various purposes taking into account the influence of external factors and the requirements of safe and efficient operation and cost; P4 - ability to master technologies and methods of cargo and passenger transportation; P5 - knowledge of technical conditions and rules of rational operation of transportation and transport-technological machines and equipment; P6 - ability to assess the risk and determine measures to ensure safe and efficient operation of vehicles; P7 - ability to plan and organize the work of transport complexes of cities and regions, organization of rational interaction of transport types, which make up a single transport system, in the transportation of passengers, luggage, cargo and cargo; P8 - ability to organize rational interaction of different types of transport in a unified transport system and effective commercial work at the object of transport, development and implementation of rational methods of work with the client; P9 - ability to monitor and controlling logistics processes; P10 - ability to search for ways to improve the quality of transport and logistics services for cargo owners, development of commodity market infrastructure and distribution channels, as well as to determine the parameters of optimization of logistics transport chains and links, taking into account the criteria of optimality; P11 - ability to provide consignors and consignees with services: on execution of transportation documents, delivery and receipt, importation and exportation of cargoes; on performance of loading and unloading and warehousing operations; on preparation of rolling stock; on cargo insurance, customs clearance of cargoes and vehicles; on provision of information and financial services; P12 - ability to develop the most effective schemes of organization of vehicle traffic and apply the latest technologies of vehicle traffic management; P13 - ability to identify priorities for solving transport problems taking into account economic efficiency and environmental safety indicators and

		use modern information technologies as a tool to optimize management processes in the transport complex; P14 - ability to design logistics systems of cargo and passenger delivery, selection of logistics intermediary, carrier and forwarder on the basis of multi-criteria approach; P15 - ability to develop projects and implement: modern logistics systems and technologies for transport organizations, technologies of intermodal and multimodal transportation, optimal routing; O - General human, socio-ethical competencies: O1 - knowledge of traditions and culture of the peoples of Kazakhstan and compliance with the norms of business ethics, possession of ethical and legal norms of behavior O2 - to be tolerant to traditions, culture of other peoples of the world; O3 - knowledge of the basics of the legal system and legislation of Kazakhstan; O4 - knowledge of trends of social development of society, ability to adequately navigate in various social situations; O5 - awareness of the social significance of their future profession, possessing high motivation to perform professional activities; O6 - possession of basic methods of protection of production personnel and population from possible consequences of accidents, catastrophes, natural disasters; C - Specific and Management Competencies: C1- independent management and control of the processes of work and learning activities within the framework of the strategy, policy and goals of the organization, discussion of the problem, argumentation of conclusions and competent operation of information; C2 - mastery of the basics of economic knowledge; C3 - knowledge and understanding of the goals and methods of state regulation of the economy, the role of the public sector in the economy; C4 - ability to search, analyze and evaluate information for the preparation and adoption of managerial decisions, readiness to bear responsibility for them, as well as to give assignments, manage the actions of others, taking into account the abilities, capabilities and motivation of employees; C5 - ability to navigate modern information flows and adapt to dynamically changing phenomena and processes in the world economy; C6 - to be flexible and mobile in various conditions and situations related to professional activity;

		C7 - knowledge of classification and assignments of types of transport and means of transportation, modes of transportation, functional areas of logistics; C8 - is able to carry out calculations of costs in the organization of transportation to determine the most optimal routes; C9 - is able to carry out calculations for determining the capacity of a warehouse, justify their choice for given conditions and storage volumes; C10 - is able to take part in the calculation and design of transportation systems, freight transportation.
12	Learning outcomes of educational program	1. Applies advanced information systems and technologies in professional activities to solve applied problems in the field of cargo transportation by different modes of transport, organization of warehouse activities, development of intermodal transportation and management of material inventories of companies. 2. Develops optimal cargo transportation routes, simulation models of logistic processes in a warehouse, production, supply of raw materials and components, distribution of finished goods on the basis of mathematical and computer modelling methods 3. Analyses the state of the transport system and networks, transport infrastructure facilities, transport and logistics processes in production on the basis of economic methods. Evaluates the results of the analysis and develops justified ways of improving transport and logistics facilities. 4. Analyses the state of the transport system and networks, transport infrastructure facilities, transport and logistics processes in production on the basis of economic methods. Evaluates the results of the analysis and develops justified ways of improving transport and logistics facilities. 5. Makes informed decisions in the management of material flows in the enterprise supply chain using logistics principles, information systems and technologies. 6. Makes informed decisions in the management of material flows in the enterprise supply chain using logistics principles, information systems and technologies. 7. Applies modern intelligent transport systems to solve various logistic tasks in transport system and networks. 8. Develops schemes for intermodal transportation of goods based on knowledge of the rules of international transportation and characteristics of

		modes of transport, transportation cost estimates and selection of optimal options for the delivery of goods based on knowledge of economics, calculation of logistics costs and methods of reducing pollution, ecology and safety. 9. Develops schemes for intermodal transportation of goods based on knowledge of the rules of international transportation and characteristics of modes of transport, transportation cost estimates and selection of optimal options for the delivery of goods based on knowledge of economics, calculation of logistics costs and methods of reducing pollution, ecology and safety. 10. Develops information subsystems of transportation process management and web-applications for the company in order to interact operatively with suppliers of material resources, logistics providers, consumers of products, consumers of transport services and corporate clients. 11. Performs collection, processing, analysis and planning of data on freight, orders and deliveries of transportation services, material inventories and resources based on the use of modern information systems, MS Excel, WMS and ERP-systems. 12. Develops data bases of material flows and related information and financial flows for supply chain analysis on the basis of database management systems and programming technology. 13. Analyse the current state of the supply chain, material flow in production and transportation network, to identify problematic areas and develop proposals for solving them on the basis of the application of business games, simulation modelling, management and marketing principles, logistics decision making methods, just-in-time, Kanban principles, etc. 14. Makes managerial decisions based on personal qualities, leadership principles and entrepreneurial skills, ability to work in a team and analyze of the socio-economic, legal, cultural, moral and ethical aspects of combating corruption in professional activities 15. Searches for scientific information for research in the field of transport services, logistics process management, supply chain management on the basis of scientific principles, R&D, decision making methods.
13	Education form	
14	Period of training	4
15	Amount of credits	240
16	Languages of instruction	kazakh russian

17	Academic degree awarded	bachelor
18	Developer(s) and authors	

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	PO15
Cycle of general education disciplines Compulsory component																		
1	Foreign language	English is a discipline of the general education cycle. After determining the level (according to the results of diagnostic testing or IELTS results), students are divided into groups and disciplines. The name of the discipline corresponds to the level of English proficiency.	10						v			v						
2	Kazakh (Russian) language	When moving from level to level, prerequisites and post requisites of disciplines are observed.	10						v			v						
3	Physical Education	The purpose of the discipline is the practical use of the skills of performing the basic elements of athletics techniques, sports games, gymnastics, and a set of standards for general physical training, including professionally applied physical training or one of the sports, methods of conducting independent physical exercises.	8						v			v						
4	Information and Communication Technologies (MOOC)	The socio-political, sociocultural spheres of communication and functional styles of the modern Kazakh (Russian) language are considered. The course covers the specifics of the scientific style in order to develop and activate the professional communication skills and abilities of students, allows students to practically master the basics of the scientific style	5						v			v						

		and develops the ability to produce a structural and semantic analysis of the text.																
5	History of Kazakhstan	Required component. The task of studying the discipline is to acquire theoretical knowledge about information processes, new information technologies, local and global computer networks, methods of information protection; obtaining skills in the use of text editors and spreadsheet processors; creation of databases and various categories of application programs	5						v			v						
6	Philosophy (MOOC)	Philosophy forms and develops critical and creative thinking, worldview and culture, provides knowledge about the most general and fundamental problems of being and endows them with a methodology for solving various theoretical practical issues. Philosophy expands the horizon of vision of the modern world, forms citizenship and patriotism, contributes to the education of self-esteem, awareness of the value of human existence. It teaches to think and act correctly, develops the skills of practical and cognitive activity, helps to seek and find ways and means of life in harmony with oneself, society, and the world around.	5						v			v						
7	Module of Social and Political Knowledge (Sociology, Political Science)	Studying the course contributes to the formation of students' theoretical knowledge about society as an integral system, provides the political aspect of training a	3						v			v						

		highly qualified specialist based on modern world and domestic political thought. The discipline is designed to improve the quality of both general humanitarian and professional training of students. Knowledge in the field of sociology and political science is necessary for understanding political processes, for forming a political culture, developing a personal position and a clearer understanding of the measure of one's responsibility.																
8	Module of socio-political knowledge (cultural studies and psychology)	The module of socio-political knowledge (culturology, psychology) is designed to acquaint students with the cultural achievements of mankind, for their understanding and assimilation of the main forms and universal patterns of the formation and development of culture. During the course of cultural studies, general problems of the theory of culture, leading cultural concepts, universal patterns and mechanisms for the formation and development of culture, the main historical stages of the formation and development of Kazakhstani culture are considered.	5						v			v						
Cycle of general education disciplines Elective component																		
9	Fundamentals of scientific research methods	The aim is to form students' basic skills of research activity. As a result of studying the discipline students will: know the basic concepts and methods of scientific research; be able to independently perform research work, analyze and summarize scientific information. Content: Essence and role of scientific research. Classification of scientific research. Methodology of scientific research. Stages of scientific research.	5														v	

		Theme of scientific research. Justification of the relevance of the selected topic. Goals and objectives of research work. Determination of the object and subject of research. Selection of methods (methods) of research. Description of the research process. Discussion of the results of the study. Formulation of conclusions and evaluation of the results obtained. Norms of scientific ethics in the preparation of publications.																
10	The basics of anti-corruption culture	The purpose of the basics of anti-Corruption culture course is to develop an anti-corruption behavioural model for students and a social atmosphere of rejection of corruption, active citizenship in the fight against corruption. Students as a result of the course must know the basic concepts and statements of the anti-corruption policy of the Republic of Kazakhstan; the essence of corruption and reasons for its origin; models of anti-corruption; legal liability for corruption offences; current legislation in the Republic of Kazakhstan on anti-corruption. be able to work on improving the level of moral and legal culture; have the skills to analyse situations of conflict of interest and make moral choices; improve the anti-corruption culture. The discipline studies the essence, causes, causes of sustainable development of corruption from both historical and modern points of view. Examines the prerequisites and impacts for the development of an anti-corruption culture. Studies the development of anti-corruption on the basis of social, economic, legal, cultural, moral and ethical norms. Studies the problems of the formation of an anti-corruption culture	5														v	

		based on the relationship with various types of social relations and various manifestations.																
11	Ecology and life safety	The aim of the discipline is to provide students with the theoretical and practical skills to create a safe, harmless and environmentally friendly living environment and to develop a conscious and responsible attitude towards safety and the environment. After completing the course, the student should acquire the following competencies: - know the theoretical foundations concerning the impact of natural and man-made hazards on the human body; ; - types and purpose of basic personal protective equipment; know how to - create safe and harmless living conditions; - be able to apply personal protective equipment; - know how to apply professional knowledge for minimization of negative factors of production, ecological safety and work conditions improvement. Course content: Environmental problems of modern times. Sources and characteristics of pollution course content: Environmental issues of today. Theoretical foundations of occupational health and safety. Basic concepts, terms and definitions of the course. Legal and organisational foundations. System of labour safety standards. Industrial sanitation. The impact of harmful substances on the human body and the maximum allowable concentrations thereof in the air of the working area. The discipline provides theoretical and practical skills in the field of ecology and safety, and is also aimed at the formation of students conscious and responsible attitude to safety and ecology, to acquire the ability to identify hazards									V							

		and willingness to apply professional knowledge to minimize negative production factors, ensure environmental safety and improve working conditions.																	
12	Fundamentals of economics and entrepreneurship	The discipline studies the basics of economics and entrepreneurship from the point of view of science and law; peculiarities, problematic aspects and development prospects; theory and practices of entrepreneurship as a system of economic and organizational relations of business structures; entrepreneurs' readiness for innovative sensitivity. The discipline reveals the content of entrepreneurial activity, career stages, qualities, competencies and responsibilities of an entrepreneur, theoretical and practical business planning and economic expertise of business ideas, as well as risk analysis of innovative development, implementation of new technologies and technological solutions.																	
Cycle of basic disciplines University component																			
13	Algorithmization and Programming	The aim of the discipline "Algorithmization and Programming" is to familiarise students with the basic principles of developing and analysing algorithms and data structures and high-level programming languages and to acquire the skills of designing and programming computer applications. As a result of studying the discipline the student should know the methods of structural and modular programming, basic data structures, methods and programming technologies: be able to develop algorithms and implement them in a programming language, describe data structures, implement methods of data	5													V			

		processing, work in a programming environment. Students get acquainted with the basic structures of algorithms: linear, branched, cyclic, with the integrated development environment for applications Visual Studio; study the forms of representation of algorithms using verbal descriptions, block diagrams, pseudocode, create console applications, study basic data types, counters, loops, arrays, as well as develop a user interface; study the principles of constructing flow diagrams, DFD data (Data Flow Diagram).																
14	Introduction to specialty	The aim of the discipline is to inform students about the nature of their future work, the basic concepts of the functional areas of logistics. After completing the course the student should know the tasks and functions of the functional areas of logistics ; - The concepts of material and related information and financial flows; types of material flows. Content of the discipline: The concept, goals and objectives of logistics. The evolution of logistics development. The concept of material flow; types of material flows; logistic stages of material flow movement. Logistics systems and supply chains. Functional areas of logistics. Purchasing logistics. Production logistics. Distribution logistics. Transport logistics. Inventory logistics. Warehousing logistics.	5	v		v								v				
15	Introduction to Web programming	The aim of the discipline is to study Web technologies and web development languages (HTML, CSS, Java Script, PHP) and development of dynamic web pages using Java Script, PHP programming languages. As a result of the study the student must know: -	5										v					

		mechanisms of interaction between web-server and client. - language syntax - control structures - rules for creating user-defined functions - methods of work with arrays and strings - file system handling methods - PHP and MySQL interaction. proficiency: - working in different software environments; - work with database MySQL; know how to: - apply modern operating systems and shells when creating software applications, - use servicer programs; - use tools to prepare HTML-pages. The discipline is aimed at studying the basics of Web programming and development; fundamentals of functioning, configuration and administration of software that implements Internet services; HTML markup language; the basics of web page layout using CSS; the basics of the JavaScript language and the jQuery framework, AngularJS; basic web page design patterns; fundamentals of the PHP server language; technologies for working with MySQL database; the basics of AJAX for real-time requests without page reloads; Introduction to CMS such as Drupal, Joomla and Wordpress.																
16	Transport modes interactions	The purpose of the discipline is to study and apply the principles of coherence and consistency of operations (technologies) with the participation of various modes of transport in the general transportation process. Discipline objectives: study of the technical and economic features of modes of transport; technologies of work of modes of transport; technical and legal basis for the interaction of transport modes. Discipline content: technical and economic characteristics of transport modes; coordination (agreement) of	5	v		v		v										

		transportation volumes, technologies, timetables of movement of different types of transport in their interaction; types of transportation with the interaction of various modes of transport. To design transportation with the participation of different modes of transport, the features of the transportation process in the interaction of different modes of transport; calculation of the cost of transportation.																
17	Cargo handling	The purpose of the discipline is to teach students to develop rational conditions for the transportation and storage of goods for their high-quality delivery. Objectives of the discipline: studying the technical characteristics of cargo, the transport state of cargo, the interaction of cargo with the environment and among themselves; development of optimal conditions for transportation and storage of goods. Upon completion of this course, the student should know the technical characteristics of different types of cargo, the transport condition of the cargo in the interaction of cargo with the environment and with each other; be able to develop optimal conditions for transportation and storage of cargo. Course content: transport characteristics and properties of goods; storage modes, methods of storing cargo, peculiarities of packaging and containers, characteristics of cargo hazard, as well as specific properties of cargo. requirements for technical means that perform transportation, cargo operations and storage of goods; rational conditions for the transportation and storage of goods.	4					v			v			v		v		
18	Freight transport systems	The purpose of the discipline is to study the principles of operation of transport and handling and storage facilities.	5							v	v			v		v		

		Discipline objectives: studying the structure of freight transport systems; analysis of logistics processes in freight transport systems. Upon completion of the course, the student should demonstrate the ability to analyze, synthesize, and design freight transportation systems, and calculate costs. Course content: classification of freight transport systems; structure of freight transport systems; logistics processes and costs in freight transport systems; technical and organizational solutions in freight transport systems.																
19	Logistics: information technology and systems	The aim of the discipline is to prepare students to solve professional tasks related to the use of information systems and technologies to optimise logistics activities. As a result of the discipline the student should know modern information systems and technologies in the functional areas of logistics and master the skills of their application to solve professional problems. Course content: Introduction to information systems and technologies in logistics. Information flows in logistics systems. Logistics information systems: purpose, structure, group classification. Subsystems of information systems: functional and supporting. Elements of the supporting subsystem: hardware, information and mathematical support. Information technology in the field of procurement and distribution. Basic information technology for enterprise management. Information technology in the warehouse sector. RFID and barcode technologies. Information technology in the field of transport. Vehicle tracking and monitoring systems. Geoinformation	5	v						v								

		systems. Modern technologies of enterprise internal document management. Internet / Intranet Technologies. E-commerce technology.																
20	Math	The purpose of mastering the discipline is to form the theoretical and practical foundations of mathematics and its applications. On the basis of studying the mathematics section, to give students the development of thinking and the achievement of mathematical culture, which is necessary for application in future professional activities. The course is based on the study of mathematical analysis in a volume that allows you to study elementary functions and solve the simplest geometric, physical and other applied problems. The main focus is on differential and integral calculus. The course sections include the differential calculus of functions of one variable, the derivative and differentials, the study of the behavior of functions, complex numbers, and polynomials. Indefinite integrals, their properties and methods of calculation. Certain integrals and their applications. Improper integrals.	5									v						
21	"Management and marketing in automobile transportation "	The aim of the discipline is to develop students' ability to form marketing strategies to improve the competitiveness of the company in the market of transport services, as well as apply advanced technologies and management tools based on an integrated approach to the various components of management: production, technological, human resources. As a result of the course, the student will know -mainstreams and scientific schools of management, allowing to understand the permissible areas and limits of their application for the successful functioning	5													v	v	

		of the company; -methods of pricing, for formation of competitive prices in market conditions - methods of forming strategies for transport companies to enter foreign markets Will be able to: -identify the strategic objectives of a transport company -identify the competitive advantages of the transport company - execute a flexible marketing strategy based on analysis of internal and external environment - assess the problem situation when making management decisions under uncertainty - develop programmes to motivate and incentivise human resources in a transport company - apply a set of marketing measures in order to improve the image and competitiveness of the transport company. The course will focus on the following issues: Evolution of management and its contemporary concepts. The external and internal environment of an organisation.The functions of management. Motivation and incentives. Decision making process. Communication and business communication in management. Managing conflict. Ethics and modern management. The content and essence of modern marketing. Marketing planning. Marketing research. Consumer behaviour. Competitiveness of a company, a product. Integrated marketing communications The aim of this discipline is to provide students with theoretical knowledge and practical skills to manage a transport company in a market economy on the basis of ensuring its competitive advantages. The objectives of the course are: - to examine the main approaches to managing an organisation - gain a																	

		comprehensive understanding of modern management methodology - definition of the role and place of marketing in the organisation and its peculiarities in a transport company - examination of pricing methods - identification of the components of competitiveness of a transport company As a result of the course, the student will know - mainstreams and scientific schools of management, allowing to understand the permissible areas and limits of their application for the successful functioning of the company; -methods of pricing, for formation of competitive prices in market conditions - methods of forming strategies for transport companies to enter foreign markets Will be able to: -identify the strategic objectives of a transport company -identify the competitive advantages of the transport company - execute a flexible marketing strategy based on analysis of internal and external environment - assess the problem situation when making management decisions under uncertainty - develop programmes to motivate and incentivise human resources in a transport company - apply a set of marketing measures in order to improve the image and competitiveness of the transport company. The course will focus on the following issues: Evolution of management and its contemporary concepts. The external and internal environment of an organisation.The functions of management. Motivation and incentives. Decision making process. Communication and business communication in management. Managing conflict. Ethics and modern																	

		management. The content and essence of modern marketing. Marketing planning. Marketing research. Consumer behaviour. Competitiveness of a company, a product. Integrated marketing communications																
22	Theory of Probability and Mathematical Statistics	The purpose of studying the discipline is to form students' scientific ideas about the essence and properties of probabilistic processes, methods of probability theory and mathematical statistics. Upon completion of this course the student should know the basic concepts of combinatorics, basics of probability theory and mathematical statistics; be able to apply standard methods and models to solve probabilistic and statistical problems. The discipline studies random variables, distribution functions and statistical methods of their search and evaluation. The subject of probability theory, probability definitions, elements of combinatorics, random variables and the laws of their distribution are considered. The basics of mathematical statistics are studied - samples, types of samples, point and interval estimates.	5										v						
23	Technologies of cloud computing	The aim of the course is to equip students with the skills to work with modern cloud computing technologies. After completing the course, the student should acquire the following competencies: - knowledge and understanding of the implementation of cloud computing technologies; - apply cloud technologies in software development; - justify the application of cloud computing technologies in system design; - communicate professionally about cloud computing; - explore new technologies based on cloud computing. The course contains the basics of cloud											v		v			

		computing technologies and their capabilities. The course covers virtualization technologies, the main models for providing cloud computing services. The basic information about the emergence, development and use of the concept and tools of cloud computing is presented. The stages of designing a cloud computing infrastructure are considered, including the principles, concepts and basic patterns of cloud architecture. Provides information about the functionality, specific application scenarios and practices for using modern cloud platforms.																
24	Transport infrastructure	The aim of the course is to provide students with theoretical and practical knowledge of the structure and indicators of transport infrastructure and n . After completing the course the student should After completing the course the student should demonstrate the ability to analyse transport infrastructure by modes of transport, to calculate their indicators, to assess costs and performance of transport organisation. Content of the discipline: The discipline will be studied. General information about roads and city streets. Classification of roads and city streets. Elements of the road. Transport performance indicators of highways. Crossing roads and railways. Track facilities of railways. Waterways of communication. Port and terminals. Air corridors. Airports: classification, structure, special territories. Technical equipment of airfields. Pipeline transport, its varieties and classification, basic technical and economic characteristics. Cableways. Transport infrastructure of the city. City ways of communication.	5			v												

		Features of transport management. Transport management structure. Functions of departments and transport management services.																
25	Transport logistics	The purpose of the discipline is to provide students with theoretical and practical knowledge of the types of transport and types of vehicles, the choice of carrier and transportation costs. After completing the course the student should know: - modes of transport; - modes of transport; - carrier selection methods; be able to: - use the knowledge gained in the discipline to select a carrier and determine the optimum mode of transport and transport route. Content of the discipline: The essence and objectives of transport logistics. Formation and development in transport logistics. Transport logistics support. Logistic intermediaries. Shipping Methods. Legal aspects of transport support. Types of transport, characteristics and technical and economic indicators. Classification of goods and vehicles. The choice of type of vehicle. Transport tariffs and rules for their application. Transport costs. In-production transport logistics.	6							v	v							
26	Data management in logistics	The aim of the course is for students to develop practical skills in using the professional packages MS Excel, MS Access, Mathcad mathematical processor for data management in logistics. After completing the course the student should demonstrate the ability to process different types of data, apply methods of processing and analysis of information flows in Apply information management techniques to logistics systems; use technology to manage information flows. Content: Data, data sets, data attributes.	5	v										v	v			

		Different technologies of data processing. Information resources logistics. Data management with the help of MS Excel logic MS Excel logic function. Data processing in the MathCad mathematical processor environment. Managing structural data. Features of working in the database management system environment. Creating a database for a transport company in MS Access.																
27	Economy of transport	The aim of this course is to provide students with an understanding of the economic principles of operation and skills in applying methods and tools to improve the operation of transport companies in a market economy. The objectives of the course are: -study of the structure of assets and resources of transport companies - Identification of factors affecting the formation of the cost of production of transport companies, -To study the methods of determining the economic efficiency of investment projects in the transport industry. At the end of the course, the student will know: - the essence of the mechanism of enterprises functioning; -classification of enterprise resources, indicators and methods of their effective use; -the order of formation of the cost price, income, profit, profitability; pricing; taxation of enterprises; calculation of economic efficiency of investment projects; - classification, composition and methods of evaluation of production and non-production costs. Will be able to: - to carry out a technical and economic analysis of the work carried out and its efficiency; - identify the reserves for reducing the cycle of work performed; - evaluate the investment attractiveness of	5			v					v								

		projects; -develop a set of measures to improve the efficiency of a transport company -assess the profitability of the company; - carry out the economic activities of the transport company. The course will cover the following issues: The production process and the basic principles of its organisation. Organisational management structure of the transport company. Production resources of the enterprise and indicators of their use. Working capital of the enterprise. Productivity of labour and efficiency of human resources. The cost of products, services or works. Calculation of the cost of freight and passenger transportation. Formation of tariffs for freight and passenger transportation. Income and profit of cargo and passenger transportation. Main indicators characterising financial condition of enterprise.																
28	Economic-mathematical models and methods in logistics	The aim of the discipline is to equip students with the theoretical and practical skills to build mathematical models of various tasks in logistics and apply methods to solve problems. After completing the course, the student should acquire the following competencies: - know the stages of economic and mathematical modelling; - methods of solving various tasks; know how to - build mathematical models; - be able to apply methods of problem solving; - be able to analyse the results of problem solution. Content of discipline: Meaningful formulation and economic-mathematical model of problems. Stages of economic and mathematical modelling. Methods and models of linear programming. Transport problem of	5		v							v						

		linear programming. Application of the problem of linear programming in production logistics. Linear integer and nonlinear models and methods for their solution. Tasks of scheduling theory and methods for their solution. Graph theory. Stochastic methods and models																	
29	Educational practice	The purpose of educational practice is to deepen, supplement and consolidate theoretical knowledge on the main disciplines of the course, obtained in the course of study. Training practice involves introducing the student to the professional environment, obtaining primary professional skills to collect information on the state of transport networks and infrastructure, transport routes.	2	v		v													
Cycle of basic disciplines Elective component																			
30	Data Analysis in Excel	The purpose of this course is to master the basic methods of quantitative analysis of numerical and non-numerical information in dogistic processes and supply chains. The main task of studying the discipline is to familiarize yourself with the methods of processing statistical information, the main methods of analyzing economic data for decision making and forecasting. As a result of studying the discipline, the student must: master the basic methods of quantitative analysis of numerical and non-numerical economic information in the Excell environment; know the basic approaches to forecasting economic indicators; Be able to apply methods using application packages. Content of the discipline: basic methods of quantitative analysis of numerical and non-numerical economic information in	5												v				

		Excel environment; forecasting methods; The application of forecasting methods of economic indicators in Excel environment; Management of structured data. Using MS Excel as a database; Add-in Analysis Package. Simulation modelling in MS Excel using the Monte Carlo method.																
31	Databases	The aim of the discipline is to equip students with database development skills. As a result of mastering the discipline the student should: know the principles and approaches to database development; be able to develop a conceptual model of data; build a relational database; perform various actions with the database. Content: The course studies the basic concepts of data warehouses, types of storages. The course deals with practical aspects related to the definition of physical and conceptual data models, the differences between them and approaches to solving problems of building databases. Various types of data storage are discussed, algorithms for organizing effective access to data and delimiting access rights to data are studied. The main part of the course focuses on the relational data model and the SQL language.	6												v	v			
32	Business games in logistics	The purpose of the study of the discipline is the acquisition by students of decision-making skills in the event of a variety of situations in logistics systems and supply chains. After completing the course, the student will be able to apply the logistic approach to solve various practical problems in professional activities; will acquire decision-making skills when considering various problem situations in logistics systems, production, inventory	5										v			v			

		management, warehousing. The content of the discipline includes: the role of business games in logistics; structure and rules of business games; conducting business games that consider various practical situations in logistics, transportation of goods, the functioning of logistics centers, in the warehouse, in the distribution of finished products; analysis of the results of business games.																
33	Simulation of logistics systems	The aim of the course is to equip students with the skills to develop simulation models and apply them to management decision-making. After completing the course, the student should be able to demonstrate the ability to set and On completion of the course the student will be able to set up and run simulation modeling of engineering logistics systems using AnyLogic software. software package. be able to The content of the discipline: principles and concept of simulation. Building a conceptual model. Process-oriented discrete simulation models. The basics of a practical approach to creating simulation models of logistics systems. Modeling and reengineering of logistics processes in supply chains.	5		v								v					
34	Intelligent transport systems	The aim of the course is to provide students with a theoretical foundation of knowledge on the principles and architecture of intelligent transport systems. After completing the course, the student should know the current state of legal and normative and technical regulation of information support of transport activity in the RK; gain theoretical and practical knowledge in the field of intelligent transport systems; be able to apply promising methods of	5								v							

		solving professional problems based on knowledge of global trends in the development of intelligent transport systems. Content of the course: Basic concepts related to Intelligent Transport Systems (ITS). ITS classification. The main areas of application of ITS. ITS and logistics. Introduction to ITS Project Development Stages of the development of ITS projects. Basic definitions. Principles of developing technical specifications for the justification of the ITS project. Development of the architecture of performance indicators for the ITS project. ITS models. Development of the ITS project. The structure and composition of the ITS system project. Examples of the use of ITS in logistics systems. Promising ITS in logistics and supply chains.																
35	Internet marketing for the promotion of logistics services	The aim of the discipline is to equip the students with the skills to develop an internet application to promote and improve the efficiency of the logistics services provided. As a result of mastering the discipline the student should: Know the features and tools of communication in the Internet environment; the characteristics and evolution of the communication tools of the Internet environment; be able to evaluate the effectiveness of the Internet environment to promote logistics services; develop an Internet application to promote logistics services. Content of the discipline: The concept of logistics service, its role in the formation of competitive advantages. The principles of logistics services. Information flows in logistics. Features of approaches to the marketing of logistics services.	5										v	v	v		v	

		Development of a service strategy for consumers of material flows in logistics channels of horizontal type. The concept of Internet marketing, its role in the formation of competitive advantages of the company. Characteristics and evolution of communication tools of the Internet environment. Evaluation of the effectiveness of Internet marketing tools. Trends in the development of contextual advertising. Development of Internet-application for promotion of logistics services. Principles of providing logistics services. Information flows in logistics. Problems and prospects of development of service logistics in Kazakhstan. Principles of service organization in logistics. Principles of service organization in logistics channels of various types (vertical, horizontal, multi-level). Features of approaches to marketing logistics center services. Stages of formation of the logistics service system. Development of a customer service strategy for material flows. Stages of developing a strategy for servicing consumers of material flows in horizontal logistics channels. The main requirements of logistics in the process of strategy development. Mission, logistics mission, communication with corporate strategy. Logistics strategy in the field of service: concept, feature, example. Factors when developing a logistics strategy. Types of logistics strategies. Stages of strategic planning of the logistics system. Strategic planning tasks. Planning of logistics service organization. Problems of service logistics planning. Indicators for evaluating the efficiency of the logistics system of the enterprise. Logistics																

		service: types of plans. Logistics service planning: essence, examples																
36	Information systems and technologies in logistics	The aim of the course is to develop skills in developing logistics process management information subsystems. As a result of the course the student will know the principles of developing logistics information systems and be able to develop subsystems of logistics information systems. Course content. Principles of developing logistics information systems (LIS). Functionalities, business processes and users of LIS. LIS handbook. LIS database. Rapid response systems. Decision-making systems. Information flows in LIS: parameters, classification. Electronic data interchange (EDI) systems. EDI platforms, connections and standards. Electronic identification. Basic automated identification systems. Technologies for supply chain monitoring systems. Virtual logistics centres.	6	v									v	v	v			
37	Commercial logistics	The aim of the discipline is to provide students with systematic knowledge and understanding of the conceptual foundations of logistics as an instrument of market economy, acquisition of skills and abilities to The objective of the course is to provide students with a systematic knowledge and understanding of the conceptual foundations of logistics as a market economy tool. After completing the course, the student should be able to set goals and formulate tasks related to the implementation of be able to use the methods of commercial logistics for solving them; be able to develop logistical strategies for material flow distribution networks develop skills in adapting to typical theoretical and	5	v		v		v			v			v		v	v	

		practical problems of commercial logistics. Content of the discipline: Introduction to commercial logistics. Logistics flows and systems in commercial logistics. Classification of logistics flows. Types of logistics systems. Strategic planning and system management in commercial logistics. The relationship between logistics systems of various types. Wholesale and retail turnover in logistics systems. Forms of movement of material resources and goods. Logistics channels. Characteristics and content of channel levels of various types. Logistics in the links of commodity movement. Control and management in commercial logistics. Planning and forecasting in commercial logistics.																
38	Mathematical statistics on transport	The purpose of teaching the discipline is to equip students with the skills to carry out analyses of freight, traffic flows based on statistical methods. After completing the course the student should be able to demonstrate the ability to carry out statistical analysis of material and transport flows; data processing. Content of the discipline: Introduction Purpose, tasks and organization of statistics. Processing statistical data and establishing the law of distribution of random variables. Fundamentals of mathematical statistics. The sequence of the statistical study. Determination of the numerical characteristics of a statistical distribution. Construction of a statistical series and a histogram. Testing the hypothesis put forward. Basic principles of organization of statistics on transport. Statistical distribution. Expected value. Dispersion. The coefficient of variation. Classification of tasks. Linear general	5									V						

		view. Transport. Linear distribution. Technical and economic tasks. Optimal use of stationary equipment. Optimum use of rolling stock. Optimal use of materials and fuels. Operational scheduling. Comprehensive optimization of current planning. Statistics of freight and passenger traffic.																	
39	Production and logistics modeling	The purpose of the discipline is to study the basic concepts and methods of modelling and simulating production and logistics processes. Content: Implementation of simulation in production and logistics. Basic concepts of modeling and simulation. Conducting a simulation study (problem definition, system analysis / conceptual model, data collection and preparation, implementation / execution model, verification and validation, experiments and analysis, simulation results). Event-discrete modeling in manufacturing and logistics. Typical applications for modeling in manufacturing and logistics. Work in AnyLogic environment. Software tools for modeling in manufacturing and logistics. Independent work with software for discrete event simulation. Advanced simulation concepts (discrete velocity simulation, system dynamics simulation)	5	v	v							v							
40	Multimodal transport technology	The aim of the discipline is to master the multimodal technology of the transport process for the delivery of various types of cargo. After completing the course the student should know legislative and legal documents in multimodal transport; organization and technology of multimodal transport and rules of loading and unloading and storage of cargo for specific operating conditions; be able to:	5	v	v			v			v						v		

		carry out the selection of transport and loading and unloading means according to the criteria of safety and security of transported cargo; possess the skills to determine the need to develop skills in determining the requirements for the development of transport networks and means of transport. Content of the course: Features of multimodal transportation systems. Strategies for multimodal transportation systems. Transport expedition in multimodal transportation systems. Integral (universal) transport operator. Criteria for decision-making when choosing a mode of transport. Intermodal technologies of multimodal transportation system. Legislative documents in the field of multimodal transportation systems. World transport systems (transport corridors).																
41	Logistic process management	Learning objectives: To acquire, deepen and consolidate knowledge about management strategies, management and organizational concepts in the field of logistics, description / modeling of logistics processes, logic and management technologies, information and management systems of logistics. Discipline content: Subject, objectives, goals of management of the logistics process. The basics of managing automated systems of material flows and managing complex logistics processes. Logistic process control / process control. Conceptual design of management, development of a logistics process	5	v		v		v		v				v		v	v	
Cycle of specialized disciplines University component																		
42	Production logistics	The aim of the discipline is to equip students with the skills to manage the	5	v		v		v	v					v		v		

		flow of materials in production. As a result of mastering the discipline the student should: Knowledge: - decision-making methods in the management of operational (production) activities of organisations; - classification of resources of the enterprise, indicators and methods of their effective use; be able to: - conduct technical and economic analysis of performed works and their efficiency; - determine the reserves to reduce the cycle of work performed; - to plan and regulate operational logistic activities in supply chains. Content of the discipline: • concepts and essence of production logistics; • principles of organization and structure of the production process, within which the material flow is organized; • types of material flows movement; • systems and methods of operational planning and material flow management, including those used in the concepts of MRP I, MRP II, ERP, JIT and the KANBAN system.																	
43	Warehouse logistics	The aim of the course is to provide students with theoretical and practical knowledge of warehouse organisation. After completing the course, the student should know: - classes of warehouses; - methods of storage; - warehouse management technologies; be able to: - carry out warehouse planning; - the costs of using the warehouse. Content of the discipline: The role and place of a warehouse in the logistics system, their functions and tasks in logistics. Conditions for the effective functioning of the warehouse in the logistics system. Characteristics of the main storage areas. Warehouse planning. Packaging in warehousing logistics. Product quality	5	V											V		V		

		control. Methods of inventory accounting and control in the warehouse. Warehouse design. Development of an optimal warehousing system. Automated warehouse management systems. Methodological development of the structure of the warehouse system of the enterprise based on the assessment of the current state and strategic planning of the enterprise. The investment program of the project of reorganization of the structure of the warehouse system of the enterprise. Warehouse system of a wholesale and retail trade enterprise operating in the field of Internet business.																	
44	Inventory management in logistics systems	The purpose of teaching the discipline is to provide students with an understanding of the stock formation mechanism, the principles and methods of inventory management in logistics systems, to develop the skills of determining the optimal level of stock and the ability to manage the process of stock formation. As a result of mastering the discipline the student should: Know: - classification of inventory; - the objectives of inventory formation; - supply calculation methods; - the logistical approach to inventory management. To be able to: - Calculate the amount of optimum order size; - estimate the costs of stock formation and storage; Have the skills to: - to independently learn new knowledge in the professional sphere; - know how to: independently acquire new knowledge in the professional sphere; determine the size of the necessary material stock. Content of the discipline: Inventory as an object of management in the logistics system. Management of different groups of stock positions. Inventory movement in	4	v	v	v		v						v		v		

		the logistics system. Indicators of inventory status in the logistics system. Inventory management process in a logistics system. Costs associated with inventory in a logistics system. Evaluation and analysis of the accuracy of inventory requirement forecasting. Determination of the volume of inventory requirement. A modification of the classical formula for calculating optimum order size. Inventory management models in a logistics system. Inventory management under uncertainty.																
45	Supply Chain Management	The purpose of the discipline is to study the essence and content of supply chain management as a science, as well as the areas of application of its concepts in practice. As a result of mastering the discipline the student should: Knowledge: - Classification of supply chain; - Objective and process approaches to supply chain management; - Key drivers of supply chain performance. Acquire the skills to: - Using key supply chain design factors at a conceptual and practical level; - Identify different ways to improve the supply chain; - Supply chain design; - Practice supply chain management and performance measurement; - Use of information technology. Content of the discipline: The course content: the concept of logistics system and supply chain management; the essence and current trends in the development of supply chains; integration in supply chain management; functional cycle of logistics; strategic planning and methods of designing supply chains; controlling key processes in supply chains; design of logistics systems and supply chains; inventory management in the supply	6	v	v			v				v		v				

		chain; logistics audit of supply chains; information integration of processes in supply chain management.																
46	Industrial practice I	Industrial practice is an important stage of practical training of specialists in logistics and transportation organization. Trainees acquire professional practical skills of their future profession in transportation, logistics companies, or subdivisions of production or commercial companies. They master new technologies and information systems in logistics and transportation organization at their workplaces	2		v	v			v	v								
47	Industrial practice II	Trainees are involved in solving logistics problems, transportation management, work on information systems in logistics and transportation organization, warehousing, research center for the study of transport flows.	7						v	v				v				
Cycle of specialized disciplines Elective component																		
48	Innovative directions in the organization of freight traffic	The purpose of the discipline - acquiring the skills to use modern information systems and technology in the organization of cargo transportation and the ability to develop and improve subsystems of transportation process management. As a result of studying this discipline, students must know: the advanced information systems and technologies used in the transportation process; be able to apply them and acquire skills to develop information subsystems of cargo transportation process management. Content of the discipline: the concept and importance of innovative directions in the organization of freight transportation; innovative technologies in the organization of freight	4	v									v	v	v			

		transportation; and their implementation; ways to improve the organization of the transportation process; ways to reduce the cost of operating rolling stock; an integrated approach to the organization of road transport at a motor transport enterprise in the context of the commercialization of the sale of motor transport services.																
49	Teamwork and business communications	The aim of the course is to develop students' teamwork and business communication skills within the rules of professional ethics and business etiquette. After completing the course the student should know: - the rules of business meetings, meetings, discussions, negotiations, conversations and internet communications within the framework of professional ethics and business etiquette; - methods of establishing cooperation and techniques of forming team cohesion and dealing with conflict situations. be able to: -interact with management and employees. Content of the discipline: Personal and interpersonal effectiveness in the process of team formation. Culture of business communications. Team building and team building. Business ethics and its role in the process of forming team goals, values, group cohesion and economic effect. Personality and its role in the process of team building. Interpersonal communications in the process of team building. Goals, objectives and technologies of team formation. Command interaction. System and technology of business communications. Features of business communication as a process. Efficiency of business communication. Conducting business meetings: conversations and	5														V	

		negotiations. Written form of business communication. Features of public communication. Modern forms of Internet communication.																	
50	Controlling of logistics systems	The purpose of the discipline is to develop students' knowledge and skills in implementing controlling functions in logistics systems. After completing the course, the student should know: - essence, functions and types of controlling; - basics of operational and strategic management logistics systems; - key performance indicators of logistics systems; Be able to: - use the methodology for developing key indicators of the system; possess the skills of controlling logistics systems. The content of the discipline: Objective prerequisites and factors for the use of controlling in modern logistics systems. Controlling and its place in the management of the logistics system. Concepts of controlling, goals, tasks, functions and models of controlling logistics systems. Strategic and operational controlling in the system management of logistics activities. Tools for strategic controlling of logistics systems. Accounting and cost control in the system of controlling logistics activities and its methods. Organization of controlling the logistics system. Information technology in controlling logistics systems.	5	v				v	v										
51	New Research Directions in Logistics	The purpose of the discipline is to develop students' skills in conducting research work and identifying innovative solutions in the professional field. After completing the course, the student should know the basic concepts of scientific research, ideas about the methods of	5	v													v		v

		searching for new knowledge and scientific information in the professional field; be able to search and review scientific literature in the professional field; find scientific achievements and innovative technologies in the field of logistics, applying scientific methods. The content of the discipline: The main objects of research in logistics. Basic paradigms and concepts of logistics. Logistics as a science and practice of managing the movement of material and related information flows in space and time. General scientific methods and approaches used in logistics. System analysis. Operations research. Methodological principles of logistics: consistency; global optimization or emergence; focus on total costs; logistics coordination and integration; hierarchies.																
52	Organization transportations and traffic control	The aim of the discipline is to study the theoretical foundations and methods of organising the delivery of goods and passengers by transport, the organisation of transport traffic and to acquire practical skills of planning and managing the transport process. After completing the course the student should know the basic principles of management of the operational work of different types of transport, taking into account the application of information and automated control systems; know the operational indicators of the use of transport units; be able to determine the capacity and carrying capacity of transport networks and facilities. Content of the discipline: Tasks of transportation organisation and traffic management in transport. Technology of railway stations; organization of work of railway and	5	v		v		v			v					v		

		transport hubs; management of car traffic on the railway network. Indicators of the use of rolling stock. The role of industrial transport in a single transport process. Organization of work of transport at industrial enterprises. Methods for studying the characteristics of road traffic. Study of traffic parameters. Methods for assessing the effectiveness of the organization of traffic. Organization of road transport. Freight and passenger traffic, methods of their study. Quantitative and qualitative indicators of transport operation.																
53	The basics of FEA and regulations for international transportation	The aim of the discipline is to acquire skills in organising foreign trade operations and contracting techniques, managing the foreign trade activities of an enterprise and organising international transport. After completing the course the student will know the legislative and legal documents of foreign economic activity; forms and methods of entering the foreign market; know the accounting techniques to determine the economic efficiency and expediency of foreign economic activity; be able to apply the legal framework of foreign economic activity; apply the rules of INCOTERMS. The content of the discipline includes: Transport in the field of foreign trade. Material and technical base of transport. Transport support in the implementation of foreign economic activity. The main types of documents on various modes of transport. Transport work in the system of the foreign economic complex. Stages of transport support of foreign economic relations. The process of organizing the delivery of goods; INCOTERMS rule.	5	v		v				v								

54	Fundamentals of research work	The aim of the course is to prepare students for research work. After completing the course the student should know the basic concepts of scientific research, ideas about the methods of scientific cognition, search for knowledge, search for scientific information; be able to conduct a search and review of scientific literature; possess the skills of searching and working with various information sources; presentation of research results. Content of the discipline: Theoretical and methodological foundations scientific research. The concept of organization of scientific research, planning and effectiveness. Typical stages of research work. Forms of organization and management of science. Classification of scientific institutions. The system of organization of research work at the university, its main goals and objectives. Types and forms of research work. Independent work of a student in research. Ethical norms of scientific work. Preparation, organization and planning of scientific research. Research methods and their characteristics. Definition of stages and tasks in scientific work, generalization of research results. Formulation of scientific work.	5	v															v
55	Fundamentals of the design of motor freight delivery systems	The purpose of the discipline is to study the process of transportation of goods by road as a design object. After completing the course, the student should know the stages of designing the process of transporting goods; main technological processes of transportation, indicators and technologies of the transportation process; be able to design a system for the transportation of goods by road; master	6	v			v				v								

		the skills of designing a transportation system. The content of the discipline: Features of the functioning of transport as a branch of material production. Transport process and its meters. Optimization of transport elements process. Technology of trucking systems of cargo delivery. Transport capabilities of transport. The basic principles of the technology of the transportation process of goods. The technological process of transportation of goods. Models for describing the functioning of cargo delivery systems by road. Advanced methods of organizing transportation, centralized transportation. Measurement of the effectiveness of motor freight delivery systems. Performance indicators. Evaluation of the effectiveness of freight delivery systems.																
56	Enterprise resource planning (ERP systems)	The aim of the discipline is to study the theoretical aspects of enterprise resource management, mastering the general patterns, principles and methods of enterprise resource planning based on the application of corporate information systems. After completing the course the student will know the standards and concepts of resource management systems (MRP, CRP, MRP II, ERP, ERP II, etc.), be able to analyse the market of software, information products and services to solve applied problems and create information systems; be able to choose rational IS and ICT solutions for business management; acquire skills of working in corporate ERP system. Content of the course: Basic concepts: ERP-system, functional module, business planning and enterprise resource management, system life cycle,	5												v	v	v		

		organizational plan, interaction of functional modules. Architecture and functionality of ERP systems. Methodology and stages of ERP systems implementation. SAP R / 3 system. Case studies of complex business processes with SAP R / 3 Enterprise.																
57	Logistics systems design	The purpose of the discipline is to study the process of designing logistics systems, modeling methods for the main logistics business processes, managing the design process. After completing the course, the student should know the basic aspects, methods and algorithms for designing logistics systems; be able to develop the organizational structure of the logistics system; master the skills of system analysis of logistics during the design process. The content of the discipline: Methodology and basic principles of the design of logistics systems. System approach and system analysis in design. Modeling of objects and subjects of management in the logistics system. Quality criteria for the performance of logistics systems. Methods and algorithms for the design of logistics systems at the macro and micro level. Automation of logistics systems design. Formation of the organizational structure of the logistics system. Optimization of design solutions. Evaluation of the effectiveness and efficiency of logistics systems.	6				v											
58	The office of freight and commercial work	The purpose of the discipline is to master the technology of cargo and commercial work at all stages of the transportation process for the delivery of various types of goods. After completing the course the student should know the technical means of freight and commercial work,	5	v				v	v			v		v		v		

		advanced ways of organising transportation in transport logistics systems, the basics of transport law; know the principles of tariff construction; be able to organise freight and commercial work on the basis of advanced innovative technologies, information systems of management of loading and unloading work. Content of the course: Discipline includes a set of questions associated with the transportation process, mainly with its start and end operations - loading and unloading; with the organisation of progressive modes of transport - package, container and routing; with the use of cars and time and capacity of the containers, with the interaction with other transport modes, the development of and compliance with the rules of transportation of cargo conditions, ensuring their safety, traffic planning, mechanization of cargo handling and others. The discipline will be studied. Fundamentals of management of cargo and commercial work. The concentration and means of cargo and commercial work. Technology implementation of industrial and commercial operations. Freight rates. The general principles of the organization of the access roads. Technology haulage of bulk transport. Freight on special conditions. Management of freight and commercial operations of the carriage of goods in mixed messages. The technology of industrial and commercial operations in international messages. Responsible for transport. Ways to improve cargo and commercial work on the railway and road transport.																

59	Project Management in Logistics	The purpose of the discipline is to study the tools and methods of project management in the field of logistics. After completing the course, the student should know the project management standards existing in world practice; tools and methods of project management; be able to develop a hierarchical work structure and build a Gantt chart; determine the critical path and risks of the project, develop a cause-and-effect diagram; master the skills of working in the MS Project environment. The content of the discipline: Basic concepts and definitions of project management. Modern standards in the field of project management, their characteristics and application in the field of logistics; Project management tools and techniques. Development of the charter and content of the project. Hierarchical structure of work and Gantt chart. The critical path method. Quality and risk management of projects in logistics. Basic skills in MS Project.	5				v											
60	Digital technologies for inventory management in the supply chain	The purpose of teaching the discipline is to equip students with the skills to apply and develop information systems and inventory management technology. As a result of mastering the discipline the student should: Know advanced digital supply chain technology, inventory management; be able to apply digital technologies in logistics; develop subsystems of information systems of inventory management, test and research on the subsystem of information systems of inventory management. Content: Major trends in the development of information systems and technologies in logistics. Key leading forces in the development of logistics and supply chain. Digital supply	4	v				v						v	v	v		

		chain technology. Standard functions of information systems for inventory management. Practical application of information systems for inventory management. Development of inventory management subsystems.																
61	Emotional Intelligence	The purpose of studying the discipline "Emotional Intelligence" is the formation of students' theoretical and practical knowledge, skills and abilities of emotional competence in the management of value chains, as well as the formation of emotionally competent behavior necessary for the professional activity of a high-level specialist based on the consideration of the emotional factor in the business processes of modern companies. After completing the course, the student should know: - basic theoretical concepts of emotional intelligence; - principles of managing one's own emotions and those of the team and group; be able to: -Manage emotions in business interactions and apply innovative methods of team and unit management based on emotional intelligence; Content of the discipline: The concept and structure of "emotional intelligence". Modern methods of assessing emotional intelligence. Modern technologies of training and development of emotional intelligence of staff. Emotional competence of the manager. Emotional intelligence and organizational culture. The concept of group coefficient of emotional intelligence. Systemic approach to the introduction of emotional intelligence	5													v	v	

5. Curriculum of educational program

MINISTRY OF EDUCATION AND SCIENCE OF THE REPUBLIC OF KAZAKHSTAN
KAZAKH NATIONAL RESEARCH TECHNICAL UNIVERSITY named after K.I.SATPAYEV

SATBAYEV UNIVERSITY

APPROVED
Chairman of the Management Board-
Rector of Almaty named after K.Satpayev
M.M. Begentaev
« » 2022 y.

CURRICULUM
of Educational Program on enrollment for 2022-2023 academic year

Educational program 6B011310 - "Digital Logistics"
Group of Educational programs B095 - "Transport services"

Form of study: full-time **Duration of study: 4 years** **Academic degree: Bachelor in services**

Discipline code	Name of disciplines	Cycle	Total amount in credits	Total hours	Classroom amount lec/lab/pr	SIS (including TSIS) in hours	Form of control	Allocation of face-to-face training based on courses and semesters							
								I course		II course		III course		IV course	
								1 semester	2 semester	3 semester	4 semester	5 semester	6 semester	7 semester	8 semester
M-1. Module of language training															
LNG 108	English language	GED, RC	10	300	0/0/6	210	E	5	5						
LNG 104	Kazakh (Russian) language	GED, RC	10	300	0/0/6	210	E	5	5						
M-2. Module of physical training															
KFK 101-104	Physical Culture	GED, RC	8	240	0/0/8	120	Diff.credit	2	2	2	2				
M-3. Module of information technology															
CSE662	Introduction to Web programming	BD UK	5	150	1/1/1	105	E		5						
CSE155	Algorithmization and Programming	BD UK	5	150	1/1/1	105	E			5					
CSE677	Information and Communication technology	GED, RC	5	150	2/1/0	105	E				5				
MNG121	Logistics: information technology and systems	BD UK	5	150	2/1/0	105	E					5			
LOG119	Data management in logistics	BD UK	5	150	2/1/0	105	E					5			
CSE423	Technologies of cloud computing	BD UK	5	150	2/1/0	105	E					5			
3601	Elective	BD CCH	5	150	2/1/0	105	E						5		
3603	Elective	PD CCH	4	150	2/0/1	105	E						4		
4701	Elective	BD CCH	6	180	2/0/1	135	E							6	
M-4. Module of socio-cultural development															
HUM100	Modern history of Kazakhstan	GED, RC	5	150	1/0/2	105	Э		5						
HUM134	Module of socio-political knowledge (cultural studies, psychology)	GED, RC	5	150	1/0/2	105	Э				5				
HUM120	Module of socio-political knowledge (sociology, political science)	GED, RC	3	90	1/0/1	60	Э				3				
HUM132	Philosophy		5	150	2/0/1	105	Э			5					
M-5. Module of anti-corruption culture, ecology and life safety base															
HUM 133	Fundamentals of anti-corruption culture	GED, CCH	5	150	2/0/1	150	E			5					
MNG 488	Fundamentals of Entrepreneurship and Leadership														
HYD 438	Ecology and life safety														
M-6. Module of mathematical training and modelling															
MAT423	Mathematics	BD, UC	5	150	1/0/2	105	E	5							
MAT177	Theory of Probability and Mathematical Statistics	BD, UC	5	150	1/1/1	105	E		5						
LOG503	Economic-mathematical models and methods in logistics	БД, ВК	5	150	1/1/1	105	Э			5					
2402	Elective	BD, UC	5	150	2/1/0	105	E				5				
3501	Elective	BD, UC	5	150	2/0/1	105	E					5			
M-7. Module of transport infrastructure and transportation															
LOG100	Introduction to specialty	BD, UC	5	150	2/0/1	105	E	5							
LOG523	Transport infrastructure	BD, UC	5	150	2/0/1	105	E	5							
LOG521	Cargo handling	BD, UC	4	120	1/0/1	75	E		4						
2301	Elective	BD, UC	5	150	2/0/1	105	E			5					
LOG101	Freight transport systems	BD, UC	5	150	2/0/1	105	E			5					
LOG500	Transport logistics	BD, UC	6	180	2/0/2	135	E				6				
MNG110	Management and marketing in automobile transportation	BD, CCH	5	150	2/0/1	105	E					5			
3502	Elective	BD, UC	5	150	2/1/0	105	E					5			
LOG502	Transport modes interactions	BD, UC	4	120	1/0/1	75	E						4		
3602	Elective	BD, CCH	5	150	2/1/0	105	E						5		
MNG109	Economy of transport	BD, UC	5	150	2/0/1	105	E							5	
AAP173	Educational practice	BD, UC	2				E		2						
M-8. Module of logistics functional areas and supply chain management															
LOG133	Warehouse logistics	PD, UC	5	150	2/0/1	105	E						5		
LOG506	Inventory management in logistics systems	PD, UC	4	120	2/0/1	75	E						4		
LOG505	Supply Chain Management	PD, UC	6	180	2/0/2	135	E							6	
4702	Elective	PD, UC	5	150	2/1/0	105	E							5	
MNG137	Production logistics	PD, CCH	5	150	2/0/1	105	E							5	
4803	Elective	PD, CCH	5	150	2/0/1	105	E								5
AAP168	Industrial internship I	PD, CCH	2				E				2				
PET506	Industrial internship II	PD, CCH	3				E						3		
Модуль-9. "R&D and project "															
4703	Элактив	ПД, КВ	5	150	2/1/0	105	E							5	

4801	Элективы	ПД, КВ	6	150	2/0/1	105	E									6
4802	Элективы	ПД, КВ	5	150	2/0/1	105	E									5
M-10, Module of final attestation																
ECA003	Preparation and writing of a thesis (project)	FA	6													6
ECA103	Defense of the thesis (project)	FA	6													6
M-11, Module of additional types of training																
AAP500	Military affairs	ATT	0													
	Total based on UNIVERSITY:							27	33	32	28	30	30	32	28	
								60		60		60		60		

Number of credits for the entire period of study					
Cycle code	Cycles of disciplines	Credits			
		required component (RC)	university component (UC)	component of choice (CCH)	Total
GED	Cycle of general education disciplines	51	5		56
BD	Cycle of basic disciplines		81	31	112
PD	Cycle of profile disciplines		25	35	60
	Total for theoretical training:	*51*	*111*	*66*	*228*
FA	final attestation	12			12
	TOTAL:	63	111	66	240

Decision of the Scientific Council of KazNRTU named after K.Satbayev. Protocol № 13 от "28" 04 2022.

Decision of the Educational and Methodological Council of KazNRTU named after K.Satbayev. Protocol № 7 от "26" 04 2022.

Decision of the Academic Council of the Project management Institute named after E.A.Turkebayev. Protocol № 6 от "24" 02 2022.

Vice-Rector for Academic Affairs — B.A. Zhautikov

Project management Institute Director — B.B. Amralinova

Department Head of Logistics — G.S. Mukhanova

Council representative from employers — S.M. Medetbekov

MINISTRY OF EDUCATION AND SCIENCE OF THE REPUBLIC OF KAZAKHSTAN
KAZAKH NATIONAL RESEARCH TECHNICAL UNIVERSITY after K. SATBAYEV

SATBAYEV UNIVERSITY

APPROVED
Director of the Institute project management after E.A. Turkebayev
B.B. Amralinova
"24" 02 2022y.

MAJOR ELECTIVE DISCIPLINES educational program for the 2022-2023 academic year admission
Educational program 6B011310 - "Digital Logistics"
Group of Educational programs B095 - "Transport services"

Full-time study Study duration : 4 years Academic degree: Bachelor in services

Year of study	Code of elective	Code of discipline	Name of discipline	Semestr	Cycle	Credits	Total hours	lec/lab/pr	SIW (including SIWT) in hours
			M-3. Module of information technology						
3	3601	LOG111	Data Analysis in Excel	6	БД КВ	5	150	2/1/0	105
		LOG525	Internet marketing for the promotion of logistics services					2/1/0	
	3603	LOG526	Digital technologies for inventory management in the supply chain	6	ПД КВ	4	120	2/1/0	75
		LOG527	Innovative directions in the organization of freight traffic					2/1/0	
4	4701	LOG507	Information systems and technologies in logistics	7	БД КВ	6	180	2/1/0	135
		CSE626	Databases					1/1/1	
			M-6. Module of mathematical training and modelling						
2	2402	LOG114	Simulation of logistics systems	4	БД КВ	5	150	2/1/0	105
		LOG108	Mathematical statistics on transport					2/1/0	
3	3501	LOG124	Production and logistics modeling	5	БД КВ	5	150	2/1/0	105
		LOG126	Intelligent transport systems					2/1/0	
			M-7. Module of transport infrustructure and transportation						
2	2301	TRA453	Logistic process management	3	БД КВ	5	150	2/0/1	105
		LOG127	Commercial logistics					2/0/1	
3	3502	LOG510	Organization transportations and traffic control	5	ПД КВ	5	150	2/1/0	105
		TRA173	The office of freight and commercial work					2/0/1	
	3602	MNG170	Business games in logistics	6	БД КВ	5	150	1/0/2	105
		LOG129	Multimodal transport technology					2/0/1	
			M-8. Module of logistics functional areas and supply chain management						
4	4702	TRA187	The basics of FEA and regulations for international transportation	7	ПД КВ	5	150	2/0/1	105
		LOG116	Enterprise resource planning (ERP systems)					2/0/1	
	4803	LOG520	Emotional Intelligence	8	ПД КВ	5	150	1/0/2	105
		LOG519	Teamwork and business communications					1/0/2	
			Модуль-9. "R&D and project "						
4	4703	LOG517	Fundamentals of research work	7	ПД КВ	5	150	2/0/1	105
		LOG518	New Research Directions in Logistics					2/0/1	
	4801	LOG515	Fundamentals of the design of motor freight delivery systems	8	ПД КВ	6	180	2/1/1	135
		LOG516	Logistics systems design					2/1/1	
	4802	LOG135	Project Management in Logistics	8	ПД КВ	5	150	2/1/0	105
		MNG141	Controlling of logistics systems					2/0/1	

Credits numbers of elective disciplines over the entire period of study	
Cycle of disciplines	Credits
Cycle of general disciplines (G)	0
Cycle of basic disciplines (B)	31
Cycle of special disciplines (S)	35
TOTAL:	66

Decision of the Academic Council of the Project management Institute named after E.A.Turkebayev. Protocol № 6 от "24" 02 2022

Head of Department of Logistics: G.S. Mukhanova

Representative of the Council from employers S.M. Medetbekov