«ALIKHAN BOKEIKHAN UNIVERSITY» EDUCATIONAL INSTITUTION

Faculty of Information Technology and Economics

Department of Information Technology Sciences

6B11329 -"Organization of transportation, traffic and operation of transport»

CATALOGUE OF ELECTIVE COURSES

yearofadmission – 2021

Semey, year 2021

Considered and approved at the meeting of educational-methodic Council of the faculty

Minutes №_5_ from 20.05.2021y.

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Awarded degree: bachelor of technology and technology in the specialty 6B11329 «Organization of transportation, traffic and operation of transport»

Group of education: B095-Transport service

№	Наименование дисциплины Name of discipline	Number of credits	Prerequisites	Постреквизиты Postrequisites	Brief description indicating the purpose of the study, brief content and expected results of the study (knowledge, skills, competencies)
SECONDARY DISCIPLINE					
Components optional (CO)					
Module of economic and legal knowledge					
1	Fundamentals of market economy and entrepreneurship	3	There is a need for legal, historical and economic knowledge that students receive in secondary schools	Sociology, Political Science	**Purpose:** to focus in the General aspects of construction Economics; to apply economic and legal knowledge in specific production situations; to protect their labor rights under current legislation. **Content:** Market economy is based on the principles of: entrepreneurship; diversity of ownership of the means of production; market pricing; contractual relations between economic entities (people, enterprises, etc.); limited state intervention in economic activity; Main features: competition; variety of forms of ownership (private, collective, state, community); full administrative independence and autonomy of the producer-the producer must be the owner of the results of their work; free choice of suppliers of raw materials and buyers of products; buyer-oriented market. **Expected result:** **Know:** the principles of market economy; organizational-legal forms of organizations; mechanisms of formation of wages and forms of remuneration. **Competence:** General education.
1	Fundamentals of law and anti-corruption culture	2	Legal and historical knowledge that students receive in secondary and secondary schools is necessary	There is a need for legal, historical and economic knowledge that students receive in secondary schools	The aim of the Study course and to introduce students to the formation of knowledge on anti-corruption and development on this basis of civic attitude towards this phenomenon. **Contents:** Fundamentals of anti-corruption culture is a holistic interdisciplinary system of knowledge for all specialties and areas of training of bachelors. **Expected result:** **Know:** the essence of corruption and the reasons for its origin, the measure of moral and legal responsibility for corruption offenses. **To be able:** to have the skills to acquire new knowledge about the anti-corruption culture is a holistic interdisciplinary knowledge system. **Competence:** General education.
Module of economic and natural knowledge					
2	Fundamentals of market economy and entrepreneurship	2	There is a need for legal, historical and economic knowledge that students receive in secondary schools	Sociology, Political Science	**Purpose:** to focus in the General aspects of construction Economics; to apply economic and legal knowledge in specific production situations; to protect their labor rights under current legislation. **Content:** Market economy is based on the principles of: entrepreneurship; diversity of ownership of the means of production; market pricing; contractual relations between economic

					entities (people, enterprises, etc.); limited state intervention in economic activity; Main features: competition; variety of forms of ownership (private, collective, state, community); full administrative independence and autonomy of the producer-the producer must be the owner of the results of their work; free choice of suppliers of raw materials and buyers of products; buyer-oriented market. **Expected result:** **Know**: the principles of market economy; organizational-legal forms of organizations; mechanisms of formation of wages and forms of remuneration. **Competence:** General education.
2	Fundamentals of safety and life	2	There is a need for legal, historical and biological knowledge that students receive in secondary schools	Sociology, Political Science	**Objective**: formation and promotion of knowledge aimed at reducing mortality and health losses from external factors and causes. Creation of human protection in the technosphere from external negative impacts of anthropogenic, technogenic and natural origin. **Content:** the science of comfortable and safe human interaction with the technosphere, is a field of scientific knowledge that studies the dangers threatening man and developing ways to protect against them in all conditions of human habitation. **Expected result:** **Know:** hazard identification recognition and quantification of the negative impacts of habitat predict the development of these negative impacts and evaluating the consequences of their actions**,** the elimination of the negative effects of dangerous and harmful factors. **Competencies:** Social and ethical
BASIC DISCIPLINE					
Components optional (CO)					
1	Theoretical mechanics	5	School course of mathematics and physics	Applied mechanics	**Purpose:** Training in knowledge and skills of using modern software **Contents:** Basic concepts and laws of mechanics. Kinematics. Kinematics of the system and a rigid body. Statics. Point dynamics. Dynamics of the system of material points **Expected result:** **Know:**the volume and level of requirements for bachelors in "Computer science and software", the content of the entire curriculum for the period of study; physical basis of PC operation, its main technical characteristics and functionality; professional problems in the field of computer engineering and telecommunications; **Know:**to pose, formulate problems use basic and special methods of information analysis in the field of professional activity; develop and justify options for effective solutions;evaluate from different angles (production, motivational, institutional, etc.) trends in the development of objects in the field of professional activity; **Skills:**special technical, economic terminology and vocabulary of the specialty, independent mastering of new knowledge, using modern educational technologies;
1	Mechanics		School course of mathematics and	Theory of machines and	**Purpose:** To ensure the assimilation of students of the basic provisions of theoretical mechanics,

			physics	mechanisms	to teach them to correctly classify the types of processes and apply the relevant theoretical recommendations. Formation of scientific engineering thinking, that is, the ability to see in each mechanical system its computational model. **Contents:** Basic concepts and laws of mechanics. Kinematics. Kinematics of the system and a rigid body. Statics. Point dynamics. Dynamics of the system of material points **Expected result:** **Know:** fundamentals of methods of structural, kinematic, power and dynamic analysis of mechanisms; principles of engineering calculations for the strength of typical elements of products. **Be able to:** fundamentals of strength calculations and design of machine parts, the sequence of product design and the main stages of design development; primary skills of practical design and construction of mechanical devices. To form and develop the creative beginnings of the individual in the implementation of the course project and in-depth study of the course section in the process of independent work. **Possess the skills:** engineering calculations; design of mechanical devices to the extent necessary for future professional activity in their specialty.
2	Geodesy	5	Drawing (school course)	Integrated transport system	**Purpose:** Acquisition of theoretical and practical knowledge of the main classical sections of higher geodesy. **Contents:** Construction of state geodetic networks. Methods of mathematical processing of measurement results.Accurate and high-precision surveying instruments. The geometry of the earth's ellipsoid.Construction of geodetic networks methods of satellite geodesy.Theories and methods of solving the main problems of higher geodesy. Construction of state geodetic networks (planned and high-rise). Methods of mathematical processing of measurement results. Accurate and high-precision surveying instruments. The geometry of the earth's ellipsoid. Mathematical methods for solving problems on the surface of an ellipsoid. Construction of geodetic networks methods of satellite geodesy. Theory and methods of solving the main problems of higher geodesy. **Expected result:** **To know:** methods center works, geodetic support stroitelstvoimoti and industrial buildings. **To be able**: to apply linear constructions, supervision over deformations of constructions, geodetic support of the cadastre. **Possess skills:** Methods of practical use of modern computers for information processing and the basics of numerical methods for solving engineering problems; Graphical methods for solving metric problems of spatial objects in drawings, methods of projection and image of spatial forms on the projection plane.
2	Engineering geodesy		Drawing (school course	Integrated transport system	**Purpose:** Acquisition of theoretical and practical knowledge of the main classical sections of higher geodesy.

					Contents: Planned and high-rise engineering geodetic networks. Topographic and geodetic surveys. Geodetic marking works. Geodetic support of installation works. Observation of deformations of structures. Geodetic works in transport construction. Geodetic works on industrial sites. Use of space and computer technologies. **Expected result:** **To know:** methods center works, geodetic support stroitelstvoimoti and industrial buildings. **To be able:** to apply linear constructions, supervision over deformations of constructions, geodetic support of the cadastre. Possess skills: Methods of practical use of modern computers for information processing and the basics of numerical methods for solving engineering problems; Graphical methods for solving metric problems of spatial objects in drawings, methods of projection and image of spatial forms on the projection plane.
3	Basics of electrical engineering and electronics	5	Higher mathematics, Physics	Technical means of traffic organization	**Purpose:** Preparation for production activities in the field of operation, maintenance and testing, diagnostics and monitoring of electrical and electrical equipment. **Contents:** Basic concepts of electrical circuits. DC electrical circuits. Electrical circuits of sinusoidal current. Electrical circuits of three-phase current. Magnetic circuits. Transformers. Electric machine. Protection and control equipment. Electrical measurement. **Expected result:** **Know:** Bases of the theory of electrical circuits, DC, AC and three-phase current, basic theory and principle of operation of transformer and electric machines, the key provisions of the Metrology and the basic techniques of electrical measurements. **Be able to:** apply the basic laws and relationships of electrical circuits, DC, AC and three-phase current for their analysis and calculation, read the electrical diagrams and understand the functions of the main nodes electrooborudovania. **Possess skills:** basic electrical measurement techniques.
3	Fundamentals of electrical systems		Higher mathematics, Physics	Technology and organization of transportation	**Purpose:** Preparation for production activities in the field of operation, maintenance and testing, diagnostics and monitoring of electrical and electrical equipment. **Contents:** Elements of electronic systems. Analog electronic circuits. Secondary power supplies. Logic gates and circuits. Digital devices in control systems. **Expected result:** **Know:** Bases of the theory of electrical circuits, DC, AC and three-phase current, basic theory and principle of operation of transformer and electric machines, the key provisions of the Metrology and the basic techniques of electrical measurements. **Be able to:** apply the basic laws and relationships of electrical circuits, DC, AC and three-phase current for their analysis and calculation, read the electrical diagrams and understand the functions of the main nodes electrooborudovania. **Possess skills:** basic electrical measurement

					techniques
4	Basics of electrical engineering and electronics	1 (A)	Higher mathematics, Physics	Technical means of traffic organization	**Purpose:** Preparation for production activities in the field of operation, maintenance and testing, diagnostics and monitoring of electrical and electrical equipment. Contents: Basic concepts of electrical circuits. DC electrical circuits. Electrical circuits of sinusoidal current. Electrical circuits of three-phase current. Magnetic circuits. Transformers. Electric machine. Protection and control equipment. Electrical measurement. Expected result: **Know:** Bases of the theory of electrical circuits, DC, AC and three-phase current, basic theory and principle of operation of transformer and electric machines, the key provisions of the Metrology and the basic techniques of electrical measurements. **Be able to:** apply the basic laws and relationships of electrical circuits, DC, AC and three-phase current for their analysis and calculation, read the electrical diagrams and understand the functions of the main nodes electrooborudovania. **Possess skills:** basic electrical measurement techniques.
4	Fundamentals of electrical systems		Higher mathematics, Physics	Technology and organization of transportation	**Purpose:** Preparation for production activities in the field of operation, maintenance and testing, diagnostics and monitoring of electrical and electrical equipment. Contents: Basic concepts of electrical circuits. DC electrical circuits. Electrical circuits of sinusoidal current. Electrical circuits of three-phase current. Magnetic circuits. Transformers. Electric machine. Protection and control equipment. Electrical measurement. Expected result: **Know:** Bases of the theory of electrical circuits, DC, AC and three-phase current, basic theory and principle of operation of transformer and electric machines, the key provisions of the Metrology and the basic techniques of electrical measurements. **Be able to:** apply the basic laws and relationships of electrical circuits, DC, AC and three-phase current for their analysis and calculation, read the electrical diagrams and understand the functions of the main nodes electrooborudovania. **Possess skills:** basic electrical measurement techniques.
5	Integrated transport system	5	Higher mathematics, Physics, Engineering geodesy	Technology and mechanization of loading and unloading operations, Fundamentals of vehicle theory, Passenger transport	**Objective:** to Reveal the regularities, the formation of the transport complex, taking into account the General transport problems and features of individual modes of transport. **Contents:** Transport security and transport management system. Questions of complex theory of technical operation of transport. Technical and operational characteristics of the main modes of transport. Industrial transport. Urban and suburban transport. Economic indicators and their features in different modes of transport. Principles and methods of choice of modes of transport. **Expected result:** **To know:** forms of interaction of different types

					of transport, General laws of development of technical means and operation of different types of transport, features of different types of transport in a Single transport system. **Be able to:** determine the importance of each mode of transport and the transport system as a whole, apply the principles of formation of a single transport system **Possess skills:** innovative methods of development of technical means and operation of different types of transport.
5	The General course of transport		Higher mathematics, Physics, Engineering geodesy	Transports network	**Objective:** to Reveal the regularities, the formation of the transport complex, taking into account the General transport problems and features of individual modes of transport. **Contents:** Introduction. Transport development. Current state. Peculiar properties. The emergence of RC transportation. Development. Indicators. Society and transport. Globalization of economy and transport. Railway transport. General characteristic. Current state and main directions of development of railway transport. Industrial transport. Generalities. Special types of industrial transport. Road transport. Generalities. Urban and suburban transport. Features and species. New modes of transport. **Expected result:** **To know:** forms of interaction of different types of transport, General laws of development of technical means and operation of different types of transport, features of different types of transport in a Single transport system. **Be able to:** determine the importance of each mode of transport and the transport system as a whole, apply the principles of formation of a single transport system **Possess skills:** innovative methods of development of technical means and operation of different types of transport.
6	Passenger traffic management	5	Organization of transportation and traffic management , Integrated transport system	Diploma work	**Purpose:** students Study the theoretical foundations and acquire practical skills in technology, organization of work on the management of passenger transport **Contents**: organization of passenger traffic. Organization of suburban traffic. The technological process of the station. Passenger railway tariffs and fees. Organization of transportation of baggage and cargo. International transport. Conditions of passage of passengers. Maintenance and repair of stations. Classification of repairs and lists of works. **Expected result:** **Know:** General principles of passenger traffic management, based on advanced technology and technology; theoretical basis for the optimization of production processes of railway passenger

					stations:. **Be able to:** use the theoretical foundations of the discipline in the production environment; to create advanced technology of railway units; to make operational decisions on the service of passenger transportation, taking into account the effective use of rolling stock; to perform technical and economic calculations. **Possess the skills:** organization of passenger transportation process, organization of service, perform calculations for the analysis and forecasting of passenger traffic; build diagrams of passenger traffic in long-distance, local and suburban communications; develop train schedules
6	Organization of passenger transportation	5	Organization of transportation and traffic management	Diploma work	**Purpose:** students Study the theoretical foundations and acquire practical skills in technology, organization of work on the management of passenger transport **Contents**: Basics of passenger transportation. The need for passenger transportation. Organization of movement of rolling stock. Organization and management of passenger enterprises. Technology and organization of route transportation of passengers in the city. Technology and organization of passenger transportation in intercity and international traffic. Technology and organization of transportation by cars. Dispatching control of passenger transportation. Quality of passenger service. Coordination of road and other types of passenger transport. Organization of railway passenger transportation. **Expected result:** **Know:** General principles of passenger traffic management, based on advanced technology and technology; construction of train schedules; determination of capacity. **Be able to:** use the theoretical foundations of the discipline in the production environment; perform technical and economic calculations. **Possess skills**: organization of transportation process of passengers, organization of service, perform calculations for the analysis and forecasting of passenger traffic; build diagrams of passenger traffic in long-distance, local and suburban communications;
7	Passenger traffic management	2	Organization of transportation and traffic management , Integrated transport system	Diploma work	**Purpose:** students Study the theoretical foundations and acquire practical skills in technology, organization of work on the management of passenger transport **Contents**: organization of passenger traffic. Organization of suburban traffic. The technological process of the station. Passenger railway tariffs and fees. Organization of transportation of baggage and cargo. International transport. Conditions of passage of passengers. Maintenance and repair of stations. Classification of repairs and lists of works. **Expected result**: **Know:** General principles of passenger traffic management, based on advanced technology and technology; theoretical basis for the optimization of production processes of railway passenger stations:.

					Be able to: use the theoretical foundations of the discipline in the production environment; to create advanced technology of railway units; to make operational decisions on the service of passenger transportation, taking into account the effective use of rolling stock; to perform technical and economic calculations. **Possess the skills**: organization of passenger transportation process, organization of service, perform calculations for the analysis and forecasting of passenger traffic; build diagrams of passenger traffic in long-distance, local and suburban communications; develop train schedules
7	Organization of passenger transportation	2	Organization of transportation and traffic management	diploma work	**Purpose:** students Study the theoretical foundations and acquire practical skills in technology, organization of work on the management of passenger transport **Contents**: Basics of passenger transportation. The need for passenger transportation. Organization of movement of rolling stock. Organization and management of passenger enterprises. Technology and organization of route transportation of passengers in the city. Technology and organization of passenger transportation in intercity and international traffic. Technology and organization of transportation by cars. Dispatching control of passenger transportation. Quality of passenger service. Coordination of road and other types of passenger transport. Organization of railway passenger transportation. **Expected result:** **Know:** General principles of passenger traffic management, based on advanced technology and technology; construction of train schedules; determination of capacity. **Be able to:** use the theoretical foundations of the discipline in the production environment; perform technical and economic calculations. **Possess skills**: organization of transportation process of passengers, organization of service, perform calculations for the analysis and forecasting of passenger traffic; build diagrams of passenger traffic in long-distance, local and suburban communications;
8	Basics of entrepreneurship in transport	1 (A)	transport law	Automated train control system	**Purpose:** Acquisition of skills for the organization and planning of the enterprise with the use of modern methods affecting the transportation process. Contents: Subjects of business relations. External rights of economic entities. Contractual relations in the business sphere. State regulation of business activity Features of legal regulation of competition law. **Expected result:** **Know:** the value, content and effectiveness of the introduction of new technology, organization and planning of activities. Methods of measuring capital investments and annual operating costs. **Be able to:** economically justify; solve issues related to the organization of the production process; develop standards of labor costs; determine the volume and quality indicators of the enterprise, the need for a contingent of workers, the wage Fund, labor productivity, cost of work, profit, profitability, operating costs and

					reduced costs. **Possess skills:** knowledge of the basics of the organization of the production process
8	Transport economics	1 (A)	transport law	Automated train control system	**Purpose:** Acquisition of skills for the organization and planning of the enterprise with the use of modern methods affecting the transportation process. **Content**: the Main provisions of the concept of market economy formation. Activities of transport enterprises in a market economy. Fixed assets and indicators of their use. Working capital in transport. Cost of transportation. The concept of Finance as a monetary relationship. Tasks of financial work in transport. Investment planning. Organization of planning and forecasting in transport.Expected result: **Know:** the value, content and effectiveness of the introduction of new technology, organization and planning of activities. Methods of measuring capital investments and annual operating costs. **Be able to:** economically justify; solve issues related to the organization of the production process; develop standards of labor costs; determine the volume and quality indicators of the enterprise, the need for a contingent of workers, the wage Fund, labor productivity, cost of work, profit, profitability, operating costs and reduced costs. **Possess skills:** knowledge of the basics of the organization of the production process
9	Basics of entrepreneurship in transport	1 (A)	transport law	Automated train control system	**Purpose**: Acquisition of skills for the organization and planning of the enterprise with the use of modern methods affecting the transportation process. **Contents**: Subjects of business relations. External rights of economic entities. Contractual relations in the business sphere. State regulation of business activity Features of legal regulation of competition law. **Expected result:** **Know:** the value, content and effectiveness of the introduction of new technology, organization and planning of activities. Methods of measuring capital investments and annual operating costs. **Be able to:** economically justify; solve issues related to the organization of the production process; develop standards of labor costs; determine the volume and quality indicators of the enterprise, the need for a contingent of workers, the wage Fund, labor productivity, cost of work, profit, profitability, operating costs and reduced costs. **Possess skills:** knowledge of the basics of the organization of the production process
9	Transport economics	1 (A)	transport law	Automated train control system	**Purpose:** Acquisition of skills for the organization and planning of the enterprise with the use of modern methods affecting the transportation process. **Content**: the Main provisions of the concept of market economy formation. Activities of transport enterprises in a market economy. Fixed assets and indicators of their use. Working capital in transport. Cost of transportation. The concept of Finance as a monetary relationship. Tasks of financial work in transport. Investment planning. Organization of planning and

					forecasting in transport.Expected result: **Know:** the value, content and effectiveness of the introduction of new technology, organization and planning of activities. Methods of measuring capital investments and annual operating costs. **Be able to:** economically justify; solve issues related to the organization of the production process; develop standards of labor costs; determine the volume and quality indicators of the enterprise, the need for a contingent of workers, the wage Fund, labor productivity, cost of work, profit, profitability, operating costs and reduced costs. **Possess skills:** knowledge of the basics of the organization of the production process
10	Applied mechanics	5	theoretical mechanics	Fundamentals of vehicle theory	**Objective:** to Apply the acquired knowledge, skills and competences in solving production and technological problems. **Contents:** Basic concepts and provisions of statics. A flat system of converging and parallel forces. A flat system of arbitrarily arranged forces. Theory of pairs of forces. Friction. Center of gravity. Point and solid kinematics. Point and solid dynamics. Mechanisms for transmission and transformation of rotational motion parameters. The main types of transfers. Bearing parts and supporting devices mechanisms. Couplings of mechanical drives. **Expected result:** **Know:** the basics of the device typical mechanisms and machines; basic methods for determining the kinematic characteristics of the links and power factors acting on the links in the process of the mechanism; basic methods of studying the stress-strain state and perform calculations on the strength of typical elements; **Be able to: use** the terminology adopted in various sections of applied mechanics; choose analogues and prototypes of structures in the design; perform engineering calculations and design simple typical mechanical devices, ensuring their performance; **Possess skills:** application of classical methods of applied mechanics to the analysis of mathematical models of formalized material objects
10	Theory of machines and mechanisms	5	theoretical mechanics	Fundamentals of vehicle theory	**Objective:** to Apply the acquired knowledge, skills and competences in solving production and technological problems. **Contents:** Fundamentals of the structure of mechanisms. Kinematic study of mechanisms. Power calculation mechanisms. Dynamic study of mechanisms. Static characteristics of the machine unit and the stability of its movement. Balancing of rotating masses, static and dynamic balancing of mechanisms. Friction and wear, mechanical efficiency of the system mechanisms. Synthesis of mechanisms with lower kinematic pairs. **Expected result:** **To know:** the basics of device model of mechanisms and machines;basic methods of determining the kinematic characteristics of links and silvipastoral acting on the links in the process of operation of the mechanism; the main melodienlehre stress-strain state and perform calculations naprasnosti of the model elements;

					methods of design and checking calculations of tipulidae machines; **Be able to:** use the terminology adopted in various sections of applied mechanics; choose analogues and prototypes of structures in the design; perform engineering calculations and design simple typical mechanical devices, **Possess skills:** application of classical methods of applied mechanics to the analysis of mathematical models of formalized material objects
11	Transport logistics	6	Means of transport	Freight traffic	**Objective:** to Study the theoretical issues of material flow management and practical skills to justify effective delivery subsystems as part of logistics systems. **Contents:** Basic concepts of logistics (Introduction to logistics. Objects of logistics management. Logistics operations and functions. Logistics systems and their components. Logistics cycles and costs). Fundamentals of logistics management (the Place of logistics management in the structure of management of the company. Key logistics factors. Interaction of logistics with functional areas of business. **Know:** the essence, goals and objectives of logistics, the object and subject of logistics, the basic concepts that operate logistics, basic methods of logistics, logistics functions, the main tasks of logistics in the field of procurement, production and distribution, transportation, warehousing and sales. **To be able:** to make decisions on the choice of optimal logistics channels, logistics chains and schemes, to formulate requirements for transport, as well as for storage systems and warehouse handling of goods in order to optimize logistics processes; **Possess skills:** methods of inventory management, optimization methods, logistic systems, methods, choice of logistics channels, supply chains and circuits, methods of evaluation indicators of logistics organization, methods of selection of logistic intermediaries.
11	Transport and logistics infrastructure		Traction and rolling stock	Transport and cargo systems	**Purpose**: The use of logistics achievements in transport enterprises is the key to improving the efficiency of the domestic production complex in enhancing its integration into the world economy. **Content**: the Essence, main objectives and principles of transport logistics. Management process based on logistics concept. Logistic function. Technical means of transshipment and storage of goods. The structure of the logistics chain; the Choice of routes of vehicles. **Know**: logistics aspects of production functioning; logistics information support; key and supporting functions of logistics systems; logistics design and management; logistics features of formation and management macrosystems; **Be able to:** offer quality production services; develop flow diagrams; manage the basic functions of the logistics information system in logistics. **Possess skills:** to determine the logistics costs of transportation processes, to determine the effectiveness of logistics systems, conditions, factors and

					criteria for optimization of the transport system.
12	Transport logistics	4 (A)	means of transport	freight traffic	**Objective:** to Study the theoretical issues of material flow management and practical skills to justify effective delivery subsystems as part of logistics systems. **Contents**: Basic concepts of logistics (Introduction to logistics. Objects of logistics management. Logistics operations and functions. Logistics systems and their components. Logistics cycles and costs). Fundamentals of logistics management (the Place of logistics management in the structure of management of the company. Key logistics factors. Interaction of logistics with functional areas of business. **Know:** the essence, goals and objectives of logistics, the object and subject of logistics, the basic concepts that operate logistics, basic methods of logistics, logistics functions, the main tasks of logistics in the field of procurement, production and distribution, transportation, warehousing and sales. **To be able**: to make decisions on the choice of optimal logistics channels, logistics chains and schemes, to formulate requirements for transport, as well as for storage systems and warehouse handling of goods in order to optimize logistics processes; **Possess skills**: methods of inventory management, optimization methods, logistic systems, methods, choice of logistics channels, supply chains and circuits, methods of evaluation indicators of logistics organization, methods of selection of logistic intermediaries.
12	Transport and logistics infrastructure	4(A)	Traction and rolling stock	Transport and cargo systems	**Purpose:** The use of logistics achievements in transport enterprises is the key to improving the efficiency of the domestic production complex in enhancing its integration into the world economy. **Content:** the Essence, main objectives and principles of transport logistics. Management process based on logistics concept. Logistic function. Technical means of transshipment and storage of goods. The structure of the logistics chain; the Choice of routes of vehicles. **Know**: logistics aspects of production functioning; logistics information support; key and supporting functions of logistics systems; logistics design and management; logistics features of formation and management macrosystems; **Be able to:** offer quality production services; develop flow diagrams; manage the basic functions of the logistics information system in logistics. **Possess skills:** to determine the logistics costs of transportation processes, to determine the effectiveness of logistics systems, conditions, factors and criteria for optimization of the transport system.
13	Automated control systems (transport)	4	Electrical engineering and electronics basics, Information technology, Organization of production and	Diploma work	**Purpose:** to Prepare graduates to work in the conditions of functioning of the automated control system based on previously studied disciplines **Contents**: Automated systems for railway transport. Functional part of ACS on railway transport. Providing of the automated control

			management of the enterprise		system of transport. Expert control system for the transport and regulation of transport processes. The work of ADCO in terms of automated transport and other sectoral subsystems. **Expected result**: **Know:** purpose, structure and basics of functioning of automated control systems in transport **Be able to:** work with the basic theoretical provisions of the course systems and methods of operation of automation devices, telemechanics and communications. **Possess the skills:** to monitor the performance of tasks and schedules; use electronic computers to process operational information; perform calculations of the norms of time to perform operations; perform calculations of performance indicators of transport facilities;
13	Theoretical foundations of automated systems		Electric machine, Information system, The foundations of entrepreneurship	Diploma work	**Purpose:** to Give theoretical knowledge about the basic concepts and principles of automation devices, telemechanics and types of communication in railway transport **Contents:** Automated control systems (transport) and its role in organization of transport services. Information support of ACS. ACS as a tool for optimization of control processes in transport systems. Technical support and means of automated control systems in transport. Branch of ACS transport companies. **Expected result:** **To know:** purpose, structure and bases of functioning of the automated control systems on railway transport **Be able to:** work at automated workplaces (AWP) of the main mass professions (input and output of information, interactive mode of operation on personal computers) **Possess skills:** filling in documentation using automated control systems for railway transport
14	Automated control systems (transport)	2 (A)	Electrical engineering and electronics basics, Information technology, Organization of production and management of the enterprise	Diploma work	**Purpose:** to Prepare graduates to work in the conditions of functioning of the automated control system based on previously studied disciplines **Contents:** Automated systems for railway transport. Functional part of ACS on railway transport. Providing of the automated control system of transport. Expert control system for the transport and regulation of transport processes. The work of ADCO in terms of automated transport and other sectoral subsystems. **Expected result:** **Know:** purpose, structure and basics of functioning of automated control systems in transport **Be able to:** work with the basic theoretical provisions of the course systems and methods of operation of automation devices, telemechanics and communications. **Possess the skills**: to monitor the performance of tasks and schedules; use electronic computers to process operational information; perform calculations of the norms of time to perform operations; perform calculations of performance indicators of transport facilities;

14	Theoretical foundations of automated systems	2 (A)	Electric machine, Information system, The foundations of entrepreneurship	Diploma work	**Purpose:** to Give theoretical knowledge about the basic concepts and principles of automation devices, telemechanics and types of communication in railway transport **Contents:** Automated control systems (transport) and its role in organization of transport services. Information support of ACS. ACS as a tool for optimization of control processes in transport systems. Technical support and means of automated control systems in transport. Branch of ACS transport companies. **Expected result:** **To know:** purpose, structure and bases of functioning of the automated control systems on railway transport **Be able to:** work at automated workplaces (AWP) of the main mass professions (input and output of information, interactive mode of operation on personal computers) **Possess skills:** filling in documentation using automated control systems for railway transport
15	Road conditions and traffic safety	6	Electrical engineering and electronics basics	Diploma work	**Purpose:** Formation of students ' professional knowledge about the insulation properties of high voltage installations, methods of testing and control of insulation, mastering the methods and means of protection against overvoltage in power supply systems. **Contents:** Road network and safety problems. Causes of accidents related to road conditions. Consideration of traffic safety requirements in the standards for road design. Influence of traffic modes and individual elements of the road on the risk of accidents. Mutual combination of road elements and traffic safety. **Expected result:** **Know:** General principles about devices and designs of stations, nodes and their elements in relation to the technology of work, the theory of calculation of these devices and modern methods of design of new and rebuilt stations and nodes **Be able to:** use the theoretical foundations of the discipline in the production environment; create advanced design technology andconstruction of railway stations and nodes **Possess skills:** to analyze schemes of stations of all types; to choose the most optimal variants of station devices placement; to design a longitudinal profile of a way, a cross-section of a roadbed,
15	Railway stations and junctions	6	Electric machine	Diploma work	**Purpose:** Formation of students ' professional knowledge about the insulation properties of high voltage installations, methods of testing and control of insulation, mastering the methods and means of protection against overvoltage in power supply systems. Contents: Significance of railway stations and junctions. Separate items. Passenger and technical passenger stations. Freight station. Specialized freight station. Precinct stations. **Expected result:** **Know:** the basic principles of the organization of the movement of trains and the main indicators of operational work. The main documents regulating the work of the station, types of maneuvers, To be able to:define the boundaries of treatment, and layouts, to make the scheme of the traction

					maintenance trains engines, determine the number of modular trains, identify ways the service area, the definition of downtime norms cars. **Possess skills:** special competencies corresponding to the main types of professional activity, formed in the course of a holistic educational process.
16	Occupational safety in road transport	5	Organization and safety of traffic, chemistry	Diploma work	**Purpose:** to Prepare students who should know the scientific and engineering foundations of labor protection and be able to apply them in practice in addressing issues of safe and harmless working conditions, prevention of industrial injuries, accidents. **Content:** Ensuring the rights of workers to labor protection Occupational safety in road and rail transport. Regulations governing the work of workers of road and rail transport. Working time and rest time of road and rail transport workers. Medical examination. **Expected result:** **Know:** the basics of the legislative and legal framework in the field of health and safety and production processes;the nature of hazardous and harmful production factors in the processes associated with the production, installation, operation and repair of production facilities; operating procedure. **Be able to**: develop measures to improve the safety of production activities; plan and implement measures to improve the sustainability of production activities of economic entities **Possess skills:** the necessary skills to provide first aid, to ensure the safety and comfort of the working environment, to possess knowledge of legal documents (by activity), which are mandatory.
16	Labor protection on railway transport	5	Traffic management, inorganic chemistry	Diploma work	**Objective:** to Consider the main issues related to the creation of healthy, safe and high-performance working conditions in the workplace, including in computer centers and enterprises, where personal computers and office equipment are installed in the offices. **Content**: Ensuring the rights of workers to labor protection Occupational safety in road and rail transport. Regulations governing the work of workers of road and rail transport. **Expected result**: **Know:** normative documents on labor protection and health, basics of occupational hygiene, occupational sanitation and fire safety; rules and regulations of labor protection, personal and industrial sanitation and fire protection **Be able to**:maintain documentation of the established sample on labor protection to meet the deadlines for its completion and storage conditions; use ecobiochemical fire-fighting equipment, means of collective and individual protection **Possess skills**: the necessary skills to provide first aid.
17	Occupational safety in road transport	2 (A)	Organization and safety of traffic, chemistry	Diploma work	**Purpose**: to Prepare students who should know the scientific and engineering foundations of labor protection and be able to apply them in practice in addressing issues of safe and

					harmless working conditions, prevention of industrial injuries, accidents. **Content**: Ensuring the rights of workers to labor protection Occupational safety in road and rail transport. Regulations governing the work of workers of road and rail transport. Working time and rest time of road and rail transport workers. Medical examination. **Expected result:** **Know:** the basics of the legislative and legal framework in the field of health and safety and production processes;the nature of hazardous and harmful production factors in the processes associated with the production, installation, operation and repair of production facilities; operating procedure. **Be able to:** develop measures to improve the safety of production activities; plan and implement measures to improve the sustainability of production activities of economic entities **Possess skills**: the necessary skills to provide first aid, to ensure the safety and comfort of the working environment, to possess knowledge of legal documents (by activity), which are mandatory.
17	Labor protection on railway transport	2 (A)	Traffic management, inorganic chemistry	Diploma work	**Objective:** to Consider the main issues related to the creation of healthy, safe and high-performance working conditions in the workplace, including in computer centers and enterprises, where personal computers and office equipment are installed in the offices. **Content**: Ensuring the rights of workers to labor protection Occupational safety in road and rail transport. Regulations governing the work of workers of road and rail transport. **Expected result:** **Know:** normative documents on labor protection and health, basics of occupational hygiene, occupational sanitation and fire safety; rules and regulations of labor protection, personal and industrial sanitation and fire protection **Be able to:**maintain documentation of the established sample on labor protection to meet the deadlines for its completion and storage conditions; use ecobiochemical fire-fighting equipment, means of collective and individual protection **Possess skills:** the necessary skills to provide first aid.
18	Theory and management of transport flows	5	means of transport	Diploma work	**Purpose:** the purpose of the discipline - to gain knowledge about the basic methods of train traffic control, methods of technology development, control systems, improve technical equipment and optimal long-term development of railway sections and directions **Contents:** Fundamentals of management of operational work of roads. Organizational structure of transport management. The role of essential services in the transport process. Purpose and classification of stations. Basic concepts, terms and definitions of the General theory of systems and control, the place of this science in modern research practice. **Expected result:** **Know**: General principles of control over the

					operational work of the Railways based on the use of advanced equipment and technology, some zeleznicarska applying the automated control system secureline roads **Be able to:** use a comprehensive system of traffic safety on rail transport; the procedure for qualification of permissible violations of train safety and shunting and its current state, the reasons causing violations of train safety, requirements and norms of PTE **Possess the skills:** the basics of technical literacy to solve problems in the workplace, methods for determining the main safety indicators PBX; safety indicators of vehicles in service.
18	Transport services	5	means of transport	Diploma work	**Purpose:** the purpose of the discipline - to gain knowledge about the basic methods of train traffic control, methods of technology development, control systems, improve technical equipment and optimal long-term development of railway sections and directions **Contents:** Types of transport services. Bases of transport expedition. Legislative basis of transport service. The concept of quality of transport services. Indicators of the quality of transport services. Service level assessment. **Expected result:** **Know:** General principles of control over the operational work of the Railways based on the use of advanced equipment and technology, some zeleznicarska applying the automated control system secureline roads **Be able to**: use a comprehensive system of traffic safety on rail transport; the procedure for qualification of permissible violations of train safety and shunting and its current state, the reasons causing violations of train safety, requirements and norms of PTE **Possess the skills**: the basics of technical literacy to solve problems in the workplace, methods for determining the main safety indicators PBX; safety indicators of vehicles in service.
19	Fundamentals of freight forwarding services	5	higher mathematics, Physics, Cartography, General road transport course	Mechanization of loading and unloading operations on the railway transport, The basics transpotno system, International transport	**Objective:** to Improve the independent research communicative competence necessary for the implementation of scientific and professional activities and allows the expansion and deepening of research training as part of other basic and variable disciplines in accordance with the requirements. **Contents:** Introduction. Forwarding service to businesses and individuals. Legal regulation of the feasibility study. Organization of work of the freight forwarding enterprise (TEP). Transport terminal. Transport hubs and transport corridors. Directions of feasibility study improvement. **Expected result:** **Know:**research activities in the field of control theory, the development of new research methods and design elements of the transport network **Be able to:** make a choice of rational approaches to assess and model the infrastructure of the transport system; to determine the main indicators characterizing the work and development of transport systems **Possess skills:** methods and means of design, modeling, experimental study of elements of a unified transport system

19	Expedition transport in international traffic	5	higher mathematics, Physics, Cartography, General road transport course	Mechanization of loading and unloading operations on the railway transport, The basics transpotno system, International transport	**Objective:** to Improve the independent research communicative competence necessary for the implementation of scientific and professional activities and allows the expansion and deepening of research training as part of other basic and variable disciplines in accordance with the requirements. **Contents**: Introduction. The concept of the international transport system. International transportation by sea. International transportation by air. International rail transport. International transportation by road. **Expected result:** **Know:**research activities in the field of control theory, the development of new research methods and design elements of the transport network; **Be able to:** make a choice of rational approaches to assess and model the infrastructure of the transport system; to determine the main indicators characterizing the work and development of transport systems **Possess skills**: methods and means of design, modeling, experimental study of elements of a unified transport system
20	State administration of road safety	5	Organization of transportation and traffic management	Labour protection, Kazakhstan's transport network, Organization of movement	**Purpose**: Formation of students ' scientific and professional knowledge and skills in the field of structural safety of cars. Reveals the main provisions of the reliability of the car and methods of its maintenance **Contents**: Introduction. The importance of road transport in the development of Kazakhstan. A set of factors and conditions affecting traffic safety. Traffic accidents, their accounting and analysis. Driver and traffic safety. Vehicles and traffic safety. Road conditions and traffic safety. Bases of the organization of traffic. Technical means of traffic management. Examination of road accidents. Organization of work to prevent road accidents in road transport enterprises (ATP). **Expected result:** **Know:** the Main indicators and characteristics of the transport work of the road, especially the road as a transport structure, patterns of traffic flows. Be able To: conduct a survey of roads, assess traffic flow regimes and traffic safety. **Possess skills**: identify potential threats and actions that affect the security of transport infrastructure and transport vehicles; ensure the implementation of measures for transport security at these facilities, depending on its different levels.
20	Rules of technical operation and bases of traffic safety on railway transport	5	Organization of transportation and traffic management	Health and safety, Kazakhstan rail network , Organization and management of transportation processes	**Purpose**: to Study the properties of motor vehicles (ATS) determine traffic safety, aimed at preventing accidents, to reduce the severity of the consequences of accidents and to reduce the harmful effects of ATS on the environment. **Content**: Purpose and content of the rules of technical operation (PTE). Basic terms and definitions in the theory and practice of railway traffic safety. Identification of traffic safety violations, the procedure of official investigation. Buildings and equipment of track facilities. Constructions and devices of station economy. Constructions and devices of power supply of the railroads. Rolling stock and special

					rolling stock. Production maneuvers. Inspection of structures, devices and their repair. Work on the elimination of the consequences of the accident. **Expected result:** **Know**: international and national normative documents regulating requirements to the BPS; vehicle classification; the types of security exchanges and the measures they provide; methods of safety assessment **To be able to**: calculate the safety distances and sight distances for overtaking and immediately after waiting; to build a dynamic corridor single PBX and trucks of different composition **Possess skills**: special terminology and vocabulary of the discipline; self-mastery of new knowledge in the field of theory and practice of vehicle safe
21	Technical means of traffic organization	5	Mechanization of loading and unloading operations on railway transport, Traction and rolling stock, railway network of Kazakhstan	Diploma work	**Purpose**: to Study the basics of management maintenance and traffic safety. For the purpose of mastering the specified type of professional activity and the corresponding professional competences trained during development of an interdisciplinary course. **Contents**: Basic terms and definitions used in the TC ODD. Classification of technical means. Indicators efficiency of application of technical means. Types of traffic lights. The design of traffic lights. Placement and installation of traffic lights. Criteria for entering traffic lights. Traffic control in certain directions of the intersection. **Expected result**: **Know**: the formation of students ' scientific thinking, the ability to apply in practice the provisions of the theory of tea. **Be able to**: determine the technical condition of the car as a whole, its units and systems, to know how to troubleshoot **Possess skills**: transport safety.
21	Technology and organization of transportation	5	Technology and mechanization of loading and unloading operations, Vehicle, the Kazakh transport network	Diploma work	**Purpose**: to Study the principles and methods of evaluation of roads from the point of view of traffic safety and familiarization with the main measures to improve road conditions in the design and operation of roads. **Contents**: Introduction. Generalities. Transportation planning. Acceptance of goods for transportation. Delivery of cargo. The use of sealing devices for sealing wagons and containers. Transportation of bulk cargo routes and groups of cars on one invoice. Conclusion of contracts for the supply-cleaning of cars and the mandatory conditions of such contracts. **Expected result**: **Know**: safety of transport processes and equipment, operational condition of roads. **Be able to**: investigate the modes of movement of vehicles; conduct surveys of UDS and identify deficiencies; develop comprehensive engineering measures to improve conditions and ensure traffic safety **Possess skills**: methods of the organization of transport process; methods of ensuring safety of transport process; methods of the analysis of transport incidents
MAIN SUBJECT					
Components optional (KV)					

1	Technology and mechanization of loading and unloading operations	5	integrated transport system	Means of transport, Safety of transport processes and equipment, Freight traffic	**Purpose**: Mastering the knowledge of modern and advanced technological processes of processing of various goods in warehouses, systems of loading and unloading machines and equipment, principles of automation of machines and transport and warehouse complex. **Contents**: Introduction. Fundamentals of technology and mechanization of loading and unloading operations and warehouse operations (Organization of loading and unloading. Classification and basic technical and operational indicators of loading and unloading machines and automation.). Loading and unloading machines and devices (machines and devices of continuous action; machines and devices of periodic action.). **Expected result:** **Know:** characteristics and organization of loading and unloading operations and warehouse operations and their importance in the transportation process; measures to accelerate scientific and technological progress **Be able to**: arrange for the efficient production of loading and unloading operations and storage operations through the application of modern systems of machines, equipment, devices, computer technology, allowing to mechanize and automate the entire transportation process skills: arrange for the efficient production of the PI and warehouse operations through the use of modern systems of machines, equipment, instruments, computers
1	Transport and cargo systems (Mechanization of loading and unloading operations)		transport network	Traction and rolling stock, Maintenance and traffic safety, Transport and cargo systems	**Purpose**: the Discipline "Mechanization of loading and unloading operations on railway transport" aims to familiarize students with transport and cargo systems, advanced technologies and scientific organization of loading and unloading operations in the first-time process on railway transport. **Contents**: Cargo. Cargo flow. Interaction of TGS with the main transport and the main production. Delivery of goods and supply of wagons to industrial enterprises. Storage facilities. Cargo fronts. Technical means of PRTs works. **Expected result:** **Know** the characteristics and organization of loading and unloading operations in railway transport and warehouse operations and their importance in the transportation process; measures to accelerate scientific and technological progress **Be able to**:arrange for the efficient production of loading and unloading work, warehouse operations through the use of modern systems of machines, equipment, device computing **To possess skills**: in development of schemes of complex mechanization and automation of loading and unloading operations and warehouse operations with application of the set means of mechanization and automation for a certain volume
2	Transport legislation in road traffic	5	Basics of law	Oproduction organization and enterprise management, Freight traffic, Basics of licensing	**Purpose**: Training of future specialists in the ability to analyze and evaluate the importance of the laws of new legal reforms in the activities of transport enterprises, understanding the role and importance of economic contracts,strict observance of the rule of law in the field of

				and certification	transport. **Contents**: Subject and system of transport law. Sources of legal regulation. The concept and content of transport relations. Subjects of transport law. Legal basis of transport complex management. Legal issues of tariffs and additional charges on transport. Implementation and protection of economic rights and obligations.. **Expected result**: **To know**: to orientate and analytically perceive the phenomena of legal reality; to use legal knowledge in practice; to analyze, to think independently **Be able to**: work with the texts of normative legal acts; solving situations from the perspective of law; work on yourself, for the development of an active life position. **Possess skills**: knowledge of the law, independently expand horizons, develop the ability to law enforcement.
2	Rules and road safety		Basics of law	Organization of production and management in railway transport, Transport and cargo systems, Licensing and certification of railway transport	**Purpose**: Training, regulation of public relations between carriers, participants in the transportation process, government agencies, passengers, senders, recipients, shippers **Contents**: Motorization of the national economy and traffic safety. Study of traffic accident statistics. Methods of field research. Inspection of road conditions. Equipment for traffic research. The role of the complex "driver-car-road" in ensuring road operation. Influence of traffic conditions and geometric elements, roads on traffic safety. street and road lighting. **Expected result:** **To know**: to orientate and analytically perceive the phenomena of legal reality; to use legal knowledge in practice **Be able to**: work with the texts of normative legal acts; solving situations from the perspective of law; work on yourself, for the development of an active life position. **Possess skills**: knowledge of the law, independently expand horizons, develop the ability to law enforcement.
3	means of transport	6	Interaction of modes of transport	Transport logistics, Basics of technical operation of vehicles, Safety of transport processes and equipment	**Objective**: Elements of safety key areas vehicle safety, design and calculation-experimental methods of determination of the main indicators of the safety of structures under operating conditions of vehicles. **Contents**: the Place of vehicle safety in the socio-economic structure of the state. Active vehicle safety. Passive car safety: internal and external. **Expected result**: **Know**: the state of operation of vehicles in Kazakhstan and abroad, their development, performance, performance, evaluation methods and ways to improve them. **Be able to**: competently approach the analysis of the effectiveness of the use of vehicles, to develop new designs of vehicles. **Possess skills**: possess knowledge about the General laws and trends of technical equipment, methods of work and improvement of modes of transport, as well as ways and prospects of development of the transport system of Kazakhstan
3	Transport and			Transport	**Purpose**: Elements of safety key areas vehicle

	handling equipment		Interaction of modes of transport	logistics, Basics of technical operation of vehicles, Safety of transport processes and equipment	safety, design and calculation-experimental methods of determination of the main indicators of the safety of structures under operating conditions of vehicles. **Contents**: the Place of vehicle safety in the socio-economic structure of the state. Active vehicle safety. Passive car safety: internal and external. **Expected result:** **Know**: the state of operation of vehicles in Kazakhstan and abroad, their development, performance, performance, evaluation methods and ways to improve them. **Be able to**: competently approach the analysis of the effectiveness of the use of vehicles, to develop new designs of vehicles. **Possess skills**: possess knowledge about the General laws and trends of technical equipment, methods of work and improvement of modes of transport, as well as ways and prospects of development of the transport system of Kazakhstan
4	Metrology, standardizatio n and quality management	5	Higher mathematics, School physics course	freight traffic	**Purpose**: Familiarization with the basics of standardization and the formation of skills for the practical application of standards in the field of transport in the design, operation of transport **Contents**: Basic concepts and definitions in the field of Metrology. Measurements, types of measurements. Metrological service. Legal metrology. Metrological support of production. **Expected result:** **Know**:theoretical bases of Metrology, regulations and legal basis of metrological provision; to explore the elements of probability theory and mathematicalstatistical; to explore elements of the theory of errors, to be trained in the processing of measurement results, assessing their accuracy and reliability. **Be able to**: apply technical and metrological legislation; work with regulatory documents; recognize forms of conformity assessment. **Possess skills**: methods of working with standard documentation on standardization and certification;revision of existing standards and other certification documents.
4	Standardizatio n, certification and technical measurements		Higher mathematics, School physics course	Transport and cargo systems	**Purpose**: Familiarization with the basics of standardization and the formation of skills for the practical application of standards in the field of electrical engineering in the design, operation of electrical installations and electrical equipment of power supply systems. **Content**: Legal and regulatory documents on standardization and types of standards. Standardization and quality. Organizational work on standardization in the Republic of Kazakhstan. The main provisions of the methodology of standards development. The history of certification. State system of certification of RK. Fundamentals. Mechanical means of measurement. Optical-mechanical measuring devices. Pneumatic measuring instruments. Electrical appliance. **Expected result:** **Know:** theory, means and types of measurements, metrological assurance of standardization and certification, means and types of measurements, schemes of direct and indirect measurements, sources and

					classification of errors **Be able to**: use standards and other regulatory documents to ensure the quality of work performed; 2. plan and execute metrological and certification tests. **Possess skills**: tools for analysis (modeling) of the project and solving typical problems of analysis and optimization; tools for project management at all stages of its life cycle
5	Transport Geoinformatics	5	Computer science school course	Automated control systems (transport)	**Purpose**: Processes, methods of search, collection, storage, complete, ideas, spread of information and means of implementation of such processes and methods, receptions, ways and methods of use of computer equipment in performing the functions of collection, storage, processing. **Contents**: Information and information technologies in transport. Technique and technology of modern information systems. Automated information technology (AIT) transport enterprise management. Application software products **Expected result:** **Know**: communication and its role in the organization of transport services; information support of the transport process; purpose and types of systems and means of communication in transport, their characteristics **Be able to**: use ACS as a tool to optimize management processes in transport systems, their functions; algorithms for effective operational decision-making. **Possess skills**: structure and levels of construction of ACS in transport, the basics of data transmission; the concept of databases and data banks ACS, the interaction of different modes of transport.
5	Information technology in transport		Computer science school course	Automated train control system	**Purpose**: to Familiarize students with modern information systems and technologies in the economy; acquisition of skills in the use of information technologies for obtaining, processing and transmitting information in the field of Economics; the ability to implement simple economic models by standard software. **Contents**: Study of the modern market of information products; knowledge of the current state and directions of development of automated information systems; knowledge of the basics of automation of economic problems; confident work on a personal computer as a user; knowledge of the basics of design and development of information systems. **Expected result:** **Know**: basic definitions of computer science, basic and composite data structures used in computer technology; basics of modern computers and their General characteristics **Be able to**: work on a personal computer in an environment of one of the operating systems (Windows); **Possess skills**: preparation of documents using office software products (MS Word, MS Excel, MS Access, MS PowerPoin
6	Examination of road accidents	5	higher mathematics, computer science, basics of law	organization of transportation and traffic management, traffic police	**Purpose**:to familiarize students and assist them in mastering the methodology of driver training, conducting classes. This discipline is intended for the acquisition of traffic management engineers pedagogical skills, the

				service, road conditions and road safety, technical means of traffic management.	basic principles of training future car drivers **Content** Generalities. General duties of drivers. Duties of a pedestrian. Traffic lights and traffic controller. The use of special signals. Manoeuvre. Speed of movement. Stop and Parking. the journey of intersections. regulated intersections. uncontrolled intersections. Pedestrian crossings and stops of route vehicles. Traffic on motorways, traffic in residential areas. priority of route vehicles. **Expected result:** **know**: the main provisions of regulations to ensure the organization of traffic; theoretical foundations of traffic management; the main ways to solve the problem of safety and efficiency of traffic; methods of analysis of accidents **Be able to:** assess the consequences of the development of motorization; develop specific measures for the operational organization of traffic; make proposals for the organization of permanent, temporary and delayed Parking vehicles
6	Investigation of traffic accidents		higher mathematics, computer science, basics of law	organization of transportation and traffic management, traffic police service, road conditions and road safety, technical means of traffic management.	**Purpose**:to familiarize students and assist them in mastering the methodology of driver training, conducting classes. This discipline is intended for the acquisition of traffic management engineers pedagogical skills, the basic principles of training future car drivers **Content** Generalities. General duties of drivers. Duties of a pedestrian. Traffic lights and traffic controller. The use of special signals. Manoeuvre. Speed of movement. Stop and Parking. the journey of intersections. regulated intersections. uncontrolled intersections. Pedestrian crossings and stops of route vehicles. **Expected result:** **Know**: the main provisions of regulations to ensure the organization of traffic; theoretical foundations of the organization of traffic. **Be able to**: assess the consequences of the development of motorization; develop specific measures for the operational organization of traffic; make proposals for the organization of permanent, temporary and delayed Parking vehicles
7	Provision of cargo transportation	4	Transport legislation, Technology and mechanization of loading and unloading operations, Transport logistics, Metrology, standardization and quality management	Diploma work	**Purpose**: to Study the basics of freight transport, the study of modern methods of delivery **Contents**: Transport process and road transport network. Cargoes and their classification. Rules of transportation of goods. Rolling stock of road transport. Technical and operational performance of the rolling stock. Rules of delivery and forwarding of goods. Transport and travel documentation. Cargo transportation management. Organization of loading and unloading operations. Long-distance and international transportation. **Expected result:** **Facts**: the procedure for drawing up transport plans and records of implementation of the transportation plan, the rules of acceptance for carriage and delivery of goods to recipients of paradoksalnie transport documents, the conditions of carriage of goods, the order

					ekspluatatsionnykh ways, the procedure of drafting of acts, the presentation and review of claims. **To be able**: to make applications for transportation accounting and reporting documents, to choose the conditions of transportation of goods, to determine the timing of loading, unloading and delivery of goods, to draw up acts and claims about the events **Possess skills**: methods and technological features of the organization and management of cargo transportation; methods of design, optimization, operation and management of transport and technological cargo systems
7	Transportation of goods under special conditions		Transport law, Mechanization of loading and unloading operations on railway transport, Logistics, Standardization, certification and technical measurements	Diploma work	**Purpose**: to Study the basics of the organization of the rules of transportation of goods, the study of modern loading and unloading operations on railway transport. **Content**: legal and Regulatory support for the transport of dangerous goods. General characteristics of dangerous goods by hazard classes. Transport and accompanying documents for the transport of dangerous goods. requirements for marking of dangerous goods and vehicles in the transport of dangerous goods **Expected result:** **Know**: the rules of preparation of transportation plans and implementation of the transportation plan, the rules of acceptance for transportation and delivery of goods to recipients, the procedure for filling in transportation documents, conditions of transportation of goods. **To be able to**: on transportation tariffing to make applications for transportation accounting and reporting documents, to choose conditions of transportation of goods, to define terms of loading, unloading and delivery of goods, to make acts and claims, about actions, **Possess skills**: filling in transportation documents.
8	Track design and operation	5	Metrology, standardization and quality management, physics	technical operation of vehicles, traffic management, technical means of traffic management	**Purpose:** to teach future specialists to choose and rationally use automotive performance materials based on the specifics of the operation of the rolling stock and the organization of maintenance and repair of vehicles. **Contents:** Introduction. Permanent way. The device of the railway track. The lower structure of the way. The content of the railway track. Repair of the railway track. **Expected result:** **Know**: familiarization with the operating conditions of vehicles, effective methods of application of automotive performance materials, methods for their production and safety requirements and environmental protection when using different types of fuels and lubricants.. **Know:** rational use of automotive performance materials; own methodology for calculating the resource requirements of materials; possess practical skills in the use of regulatory materials for the organization of work on the technical operation of motor vehicles.
8	Design of access roads of	5	Metrology, standardization and	technical operation of	**Purpose:** to teach future specialists to choose and rationally use automotive performance

	industrial enterprises		quality management, physics	vehicles, traffic management, technical means of traffic management	materials based on the specifics of the operation of the rolling stock and the organization of maintenance and repair of vehicles. **Contents:** General concepts and classification of transport devices and structures. General provisions of road design. The main normative documents. Selection of the route direction, calculation of road elements in longitudinal and transverse profiles. Stations and railway. **Expected result:** **Know:** familiarization with the operating conditions of vehicles, effective methods of application of automotive performance materials, methods for their production and safety requirements and environmental protection when using different types of fuels and lubricants.. **Know:** rational use of automotive performance materials; own methodology for calculating the resource requirements of materials; possess practical skills in the use of regulatory materials for the organization of work on the technical operation of motor vehicles.

LIST OF DISCIPLINES
optional components for an educational program
6B11329 "Organization of transportations, movements and transport operation»
Duration of study: full-time 4 years

Name of discipline	Discipline code	loan	semester
Secondary discipline			
Component of choice 1			2
Module of economic and legal knowledge			
Fundamentals of market economy and entrepreneurship	FMEE1111	3	
Fundamentals of law and anti-corruption culture	FLACC1112	2	
Component of choice 2			2
Module of economic and natural knowledge			
Fundamentals of market economy and entrepreneurship	FMEE1111	3	
Fundamentals of safety and life	FSL1112	2	
Basic discipline			
Component of choice 1			2
Theoretical mechanics	TM 2212	5	
Mechanics	Meh 2212	5	
Component of choice 2			2
Geodesy	Geo 1213	5	
Introduction to computational Informatics	ICI 1210	5	
Component of choice 3			2
Basics of electrical engineering and electronics	BEEE 2215	4	
Fundamentals of electrical systems	FES 2215	4	
Component of choice 4			4
Passenger traffic management	PTM 1217	5	
Organization of passenger transportation	OPT 1217	5	
Component of choice 5			3
Basics of entrepreneurship in transport	BET 1317	5	
Transport economics	TE 1317	5	
Component of choice 6			3
Applied mechanics	AM 2214	5	
Theory of machines and mechanisms	TMM 2214	5	
Component of choice 7			6
Transport logistics	TL 2218	6	
Transport and logistics infrastructure	TLI 2218	6	

Component of choice 8			5
Integrated transport system	ITS 3216	5	
The General course of transport	GCT 3216	5	
Component of choice 9			8
Automated control systems (transport)	ACS 2225	4	
Theoretical foundations of automated systems	TFAS 2225	4	
Component of choice 10			6
Road conditions and traffic safety	RCTS 2219	6	
Railway stations and junctions	RSJ 2219	6	
Component of choice 11			6
Occupational safety in road transport	OSRT 2220	5	
Labor protection on railway transport	LPRT 2220	5	
Component of choice 12			7
Theory and management of transport flows	TMTF 2221	5	
Transport services	TS 2221	5	
Component of choice 13			7
Fundamentals of freight forwarding services	FFFS 1213	5	
Expedition transport in international traffic	ETIT 1213	5	
Component of choice 14			7
State administration of road safety	SARS 1223	5	
Rules of technical operation and bases of traffic safety on railway transport	RTOBTSRT 1223	5	
Component of choice 15			7
Technical means of traffic organization	TMTO 3224	5	
Technology and organization of transportation	TOT 3224	5	
Main subject			
Component of choice 1			4
Technology and mechanization of loading and unloading operations	TMLUO 2305	5	
Transport and cargo systems (Mechanization of loading and unloading operations)	TCS 2305	5	
Component of choice 2			5
Transport legislation in road traffic	TLRT 2306	5	
Rules and road safety	RRS 2306	5	
Component of choice 3			6
Means of transport	MT 3307	6	
Transport and handling equipment	THE 3307	6	
Component of choice 4			6
Metrology, standardization and quality management	MSQM 2308	5	
Standardization, certification and technical measurements	SCTM 2308	5	
Component of choice5			7
Transport Geoinformatics	ITT 1109	5	
Information technology in transport	BTT 1309	5	
Component of choice6			7
Examination of road accidents	ERA3310	5	
Investigation of traffic accidents	ITA3310	5	
Component of choice7			8
Provision of cargo transportation	PCT 3311	4	
Transportation of goods under special conditions	TGUSC 3311	4	
Component of choice 7			8
Track design and operation	TDO 4312	5	
Design of access roads of industrial enterprises	DARIE 4312	5	