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"____»_____2023

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Educational program 6B11301 "Organization of transportation, traffic and operation of transport" (enrollment 2023)

No.	Number of credits Comrade ECTS	List of disciplines of the university component and elective disciplines	
1	2	3	4
		OOD 02 General Education Module 2	
1	**5 (OOD)**	**OROAK 3108 "Fundamentals of Law, Fundamentals of Anti-Corruption Culture" 2-1-0-6** **Prerequisites:** **IK 1101 1-2-0-2,** **Fil 2102 1-2-0-4** **Post-requisites**:- **The purpose of studying the discipline is:**the formation of the legal worldview of students in the context of solving the problems of modernizing social and moral and legal consciousness, acting as necessary conditions for improving the legal statehood in the Republic of Kazakhstan, developing on this basis the civic position of society. **Contents of main sections**: understanding the basis of law as an independent science, as well as as an academic discipline, is based on the following basic elements: the basics of the theory of state and law, the basics of constitutional law, the basics of administrative law, labor law, civil and family law, the basics of criminal and procedural law, fundamentals of financial and tax law, fundamentals of environmental and land law, fundamentals of international law. Understanding the basis of anti-corruption culture as an independent science is based on the following main elements: the concept of corruption as an antisocial phenomenon, the formation of an anti-corruption culture, legal responsibility for acts of corruption, moral and ethical responsibility for acts of corruption in various fields, improvement of socio-economic relations of Kazakhstani society, as conditions for combating corruption. **Learning outcomes:**have skills in working with sources of law, be able to apply the rules of law to specific legal situations, know the meaning legislative acts, as well as leading branches of national law, using the law, to protect their rights and obligations. Have skills in working with current legislation in the field of anti-corruption, be able to act in situations of conflict of interest, know the peculiarities of the nature of corrupt behavior, as well as issues of legal liability for corrupt acts.	

2	**5 (OOD)**	**OEP 2109 "Fundamentals of Economics and Entrepreneurship" 2-1-0-4 Prerequisites: Mat 1201 1-2-0-1 Post-requisites: GTTP 4218 2-1-0-8, OGKR 4220 2-1-0-7** **The purpose of studying the discipline is:** formation of economic thinking, studying the scientific and legislative foundations of organizing and conducting business activities, based on the concept and tools of a market economy. **Contents of main sections**: ownership and organization of economic systems, the mechanism of a market economy, production resources and the efficiency of their use, national economy, economic growth and instability of a market economy, inflation and unemployment, state monetary policy, foreign economic relations and the world economy, international monetary and financial system, entrepreneurship and its place in the modern world, choosing a business idea and developing a business model, business planning as a tool for enterprise management, attracting investment and government support measures for entrepreneurship, finance and calculations in business, business development strategy, **Learning outcomes:** the student must have the skills to use the fundamentals of economic knowledge in professional activities, adopt optimal organizational and management decisions at the enterprise, monitoring, analysis and processing of information that contributes to the creation of a business and the assessment of business risks.
3	**5 (OOD)**	**EBZhD 2110 "Ecology and life safety" 2-1-0-4 Prerequisites: IK 1101 1-2-0-2 Post-requisites: OT 4304 2-0-1-7** **The purpose of studying the discipline is**: to develop in students practical risk management skills in the field of civil defense and emergency situations, environmental protection. **Contents of main sections**: legislative framework in the field of ecology and safety, environmental problems of our time, the concept of sustainable development (green economy), ecology of the transport industry, classification of emergency situations, sustainability of the functioning of facilities in emergency situations, protection of the population in emergency situations. **Learning outcomes:** apply a system for managing environmental risks and risks in the field of civil defense and emergency situations at industrial enterprises and other organizations.
4	**5 (OOD)**	**MNI 3111 "Scientific Research Methods" 1-2-0-6 Prerequisites: - Post-requisites: PP 4306 0-10-0-8** **The purpose of studying the discipline is**: acquisition of a system of basic knowledge about the methodological foundations of the organization and technology of scientific research; skills and abilities to carry out independent scientific research in the field of professional activity from choosing a topic to public presentation of research results. **Contents of main sections**: methodological foundations of scientific research: categories and concepts of scientific research; classification of scientific research (by purpose, source of funding and deadlines); methodological culture of the researcher; logical structure of research: concept of research logic; methodological characteristics of the study (justification of the relevance of the study; problem and topic of the study; purpose, object and subject of the study; research hypothesis; research objectives; evaluation criteria experimental activities); the relationship between the main methodological characteristics of the study; scientific research methods: theoretical research methods: empirical research methods; statistical methods and means of formalization in research; decor

		results of scientific research: types of design of scientific research work (abstract, annotation, scientific article, scientific report, theses, methodological manual, monograph, review, etc.) **Learning outcomes:**the student organizes and conducts scientific research: chooses the methodology of scientific research; builds the logic of scientific research; develops scientific research apparatus; carries out analysis and selection of appropriate methods scientific research; independently carries out scientific research; draws up the results of scientific research.
		EN 03 Natural Sciences Module
5	**5 (DB)**	**Mat 1201 "Mathematics" 1-2-0-1** **Prerequisites: -** **Postrequisites**: **UEP 2219 2-2-0-4** **UPP 3310 2-1-0-6** **OGKR 4220 2-1-0-7** **The purpose of studying the discipline is**: development of logical and algorithmic thinking in students, study of basic methods of research and solving mathematical problems; the ability to apply acquired theoretical knowledge to solving specific practical problems. **Contents of the main sections:**elements of linear algebra and analytical geometry. Solving systems of linear equations using Cramer's rule and the inverse matrix method. Dot product, vector product, mixed product and their properties. Analytical geometry on the plane and in space. Equation of a plane. Equation of a straight line. Differential calculus of a function of one variable. Theorems of Rolle, Lagrange. L'Hopital's rule. Study of functions: conditions for increasing and decreasing functions. General scheme for studying the function and plotting the graph. Integral calculus of a function of one variable. Indefinite integral, its properties. Methods of integration, integration of rational functions by decomposition into simple fractions. Integration of simple integrals containing trigonometric functions and rational expressions. Calculation of a definite integral: by parts and by change of variable. Application of a definite integral. **Learning outcomes:**selects mathematical methods and algorithms for solving problems for organizing transportation, applies mathematical methods of theoretical and applied research when solving transport problems.
6	**5 (DB)**	**PM 2202 "Applied Mathematics" 1-2-0-3** **Prerequisites:** **Mat 1201 1-2-0-1** **Post-requisites**: **GTTP 4218 2-1-0-8** **TTPPP 4218 2-1-0-8** **The purpose of studying the discipline is**: development of logical and algorithmic thinking in students, study of basic methods of research and solving mathematical problems; the ability to apply acquired theoretical knowledge to solving specific practical problems. **Contents of the main sections:**differential and integral calculus of functions of several variables. Functions of several variables. Tangent plane and normal to the surface. Extremum of a function of several variables. Necessary and sufficient condition. Conditional extremum. Double and triple integrals. Their main properties. Calculation of double and triple integrals in Cartesian coordinates. Ordinary differential equations. First order differential equations. Equations with separable variables. Linear homogeneous and inhomogeneous equations. Differential equations of higher orders. Linear differential equations, homogeneous and inhomogeneous. Method of variation of arbitrary constants. Linear differential equations with constant coefficients. Equations with the right side of a special form. Rows. Number series. Necessary condition for convergence. Series with positive terms, their signs of convergence. Alternating rows. Leibniz's sign. Functional series. Power series. Application of power series in approximate calculation. **Learning outcomes**: applies the basic theoretical principles of mathematics when solving engineering problems in practice, creates mathematical model of the situation, analyzes and transforms it, interprets the results obtained when solving transport problems.

7	**5 (DB)**	**Fiz 1203 "Physics" 1-1-1-** **1Prerequisites: -** **Postrequisites:** **RM 2209 2-2-0-4** **EOE 2213 1-1-1-3** **OES 2213 1-1-1-3** **The purpose of studying the discipline is:**formation of an idea of the modern physical picture of the world and trends in its development; knowledge and skills to usefundamental laws, theories of classical and modern physics, as well as methods of modern physical research as the basis of a system of professional activity, skills of independent cognitive activity, the ability to use computer technology to solve both physical and applied professional problems. **Contentmain sections:**kinematics.Dynamics of a material point and a rigid body. Conservation laws. Harmonic vibrations. Wave processes. Statistical physics. Fundamentals of thermodynamics. Gas laws. Electrostatics. Electrostatic field in vacuum. Dielectrics in an electric field. Capacitors. Constant electric current. Magnetic field in vacuum. Magnetic field in matter. The phenomenon of electromagnetic induction. Electromagnetic oscillations and waves. Geometric optics. Photometry. Interference of light waves. Diffraction. Electromagnetic waves in matter. Polarization of light. Dispersion and absorption of light. Quantum theory of radiation. Thermal radiation Experimental substantiation of the basic ideas of quantum theory. Wave-particle duality. Hydrogen atom and molecule in quantum theory. Atomic nucleus and elementary particles **Learning outcomes:**determine the range of physical lawsto solve problems of the future specialty and have the skills to solve them; select and apply appropriate methods for modeling physical and technological processes; combine theory and practice to solve engineering problems; own methods conducting a physical examination; realize the role of the influence of physics on the development of applied technical sciences; be able to use classical laws in practical activities.
8	**5 (DB)**	**UP 1204 "Training practice" 0-10-0-2** **Prerequisites: - Postrequisites:** **PP1 2208 0-10-0-4** **Purposestudying the discipline is:**acquaintance of studentswith the areas of activity of the enterprise and organizations involved in the transport process, educational programs in the specialty, types, functions and tasks of future professional activity. **Contentmain sections:**familiarizationstudents with general principles of organizing the transport process; familiarization with the rolling stock of various types of transport, its general technical characteristics and design; familiarization with the transport network of the region, its main elements; familiarizing students with the general organization of the transportation production process and the structure of enterprises; familiarization with safety, labor protection and environmental issues. **resultstraining:**haveability to develop taking into account technological, design, aesthetic, economic and other parameters; ability to use program-targeted methods for analyzing technical, technological, organizational, economic and social issues; be able to build models of professional tasks and interpret the results obtained, adapt to external conditions and implement standard technological transport processes, as well as develop and implement new types of transport services; be able to analyze and optimize the operation of the transport system at all levels, carry out organizational and technological activities in railway and industrial transport, organize the operation of vehicles and intelligent systems.
		OPP 04 Module Organization of the transportation process
9	**5 (DB)**	**VVT 3205 "Interaction of modes of transport" 2-1-0-6** **Prerequisites:** **OPUD 2303 2-2-0-4** **Post-requisites: ASUPT** **4312 1-2-0-7**

		Purposestudying the discipline is:studyingrelated modes of transport and the conditions of their interaction in the country's economy, including in the transportation process, determining the importance of each type of transport in the transport system and in a market economy. **Contentmain sections:**interactiontypes of transport in a unified transport system; classification characteristics; physical basis of machine failures; assessment of quality and technical level. Studying the discipline will prepare you for scientific and practical activities in the field of vehicles and a unified intelligent transport system. **resultstraining:**knowmethodology for calculating performance indicators of entrepreneurial activity, the development of modes of transport and their technical and economic characteristics; about the main transport flows; about the types of message distribution; on cargo and passenger flows and their classifications, develop and make decisions in different types of planning and determine optimal solutions with changes in information flows in transport, be able to organize the operation of vehicles and intelligent systems.
10	**5 (DB)**	**Gruz 3206 "Cargo Science" 2-1-0-5** **Prerequisites:** **OPUD 2303 2-2-0-4** **Post-requisites:** **GTTP 4218 2-1-0-8** **The purpose of studying the discipline is:**obtaining theoretical and practical knowledge in the field of preparation, storage and loading and unloading of certain types of cargo, providing information about the classification of cargo and their physical and chemical properties, volumetric and mass characteristics. **Contents of the main sections:**cargo classification. Transport properties of cargo. Physico-chemical properties of cargo. Methods for determining cargo quality. Cargo coding system. Unified tariff and statistical nomenclature of goods. Transportation and packaging. Materials for preparing containers. Determination of the strength of the transport frame. Classification of perishable goods and conditions of their storage and transportation. Agreement for the preparation of refrigerated cars for loading. Classification of grain cargo. Preparation and transportation of grain cargo. **Learning outcomes:**know the methodology for calculating business efficiency indicators, the development of modes of transport and their technical and economic characteristics; about the main transport flows; about the types of message distribution; about cargo and passenger flows and their classifications, develop and make decisions in different types of planning and determine optimal solutions with changes in information flows in transport, be able to organize the operation of vehicles and intelligent systems.
eleven	**5 (DB)**	**LT 4207 "Logistics in transport" 2-1-0-8 Prerequisites:** **PTEBT 3211 2-1-0-5** **Post-requisites: -** **The purpose of studying the discipline is:**students' assimilation of theoretical knowledge, formation of skills and abilities that ensure qualified professional activity in the field of organization and management of transport and logistics systems. **Contents of the main sections:**Transport process and its elements. Transport logistics support. Technology of the transportation process based on the principles of logistics. The concept of a logistics system. Foreign experience in the development of transport and logistics systems for cargo delivery using intelligent transport systems. **Learning outcomes:**masters methods for determining the quality of cargo and understands its importance; knows the physical and chemical properties, volumetric and mass characteristics of the cargo; studies methods of placing and securing cargo on rolling stock. Familiarizes yourself with the cargo coding system and its cost; understands the importance of classifying goods according to their individual properties

12	**5 (DB)**	**PP1 2208 "Industrial practice 1" 0-10-0-4 Prerequisites:** **UP 1204 0-10-0-2** **Post-requisites:** **PP2 3302 0-10-0-6** **The purpose of studying the discipline is:**consolidation and deepening of theoretical knowledge acquired by students at the university when studying special disciplines, acquisition of practical skills in organizing cargo and commercial work of the station, activities aimed at ensuring traffic safety, experience in organizational work, familiarization with general issues of organization and labor protection at enterprises, studying production structure of the enterprise. **Contents of the main sections:**regulations on the railway station; rules of technical operation of railways; instructions for signaling on the railways of the Republic of Kazakhstan; TPA and local instructions for the reception, departure of trains and shunting work; technological process of the station. **Learning outcomes:**be able to develop measures to ensure safety in various conditions and at various stages of the transport process; ability to control the quality of technological processes, materials and finished products; be able to build models of professional tasks and interpret the results obtained, adapt to external conditions and implement standard technological transport processes, as well as develop and implement new types of transport services; be able to analyze and optimize the operation of the transport system at all levels, apply the acquired knowledge when solving specific scientific, technical, production and economic problems in the field of organizing transportation, traffic and operation of transport.
		PO 05 Professionally oriented module
13	**6 (DB)**	**RM 2209 "Applied Mechanics" 2-2-0-4** **Prerequisites:** **Mat 1201 1-2-0-1** **Post-requisites:** **PSTP 3308 1-2-0-6** **The purpose of studying the discipline is:**formation in students of knowledge about general methods of research, calculation and design of structural elements and mechanisms necessary for the creation of machines, installations, devices, automatic devices and complexes that meet modern requirements for efficiency, accuracy, reliability and efficiency. **Contents of the main sections:**general principles of the design of mechanisms and the purpose of their parts, methods of calculation and design of structural elements and mechanisms for strength and reliability. **Learning outcomes:**have an idea of the general laws of motion and equilibrium of bodies and the interactions that arise during this; about the fundamentals of mechanics of materials; on general methods of research and design of mechanical elements that are an integral part of machines, equipment and devices; know the main types of mechanisms and methods of their calculation and design; be able to select design schemes, carry out calculations for strength, rigidity and stability of machine elements and structures; gain practical skills in formulating and solving problems in the field of mechanics; calculation of parts and assemblies of machines and mechanisms.
14	**6 (DB)**	**OKT 1210 "General course of transport" 2-2-0-2** **Prerequisites: --** **Postrequisites:** **SVPT 3310 2-1-0-6** **The purpose of studying the discipline is:**familiarizing students with the basics of their future profession and forming a holistic idea of transport, its place and role in the national economy and in a unified transport system. **Contents of the main sections:**basic concepts of transport, the role and place of transport in national significance, safety,

		railway transport, air transport, road transport, sea transport, industrial transport, specialized and non-traditional modes of transport, the use of digital technologies in various types of transport.. **Learning outcomes:**be able to carry out organizational and technological activities in railway and industrial transport, develop measures to ensure work safety in various conditions of the transport process, make management decisions on the organization of transportation and operation of transport, make decisions in different types of planning and determine optimal solutions with changes in information flows to transport.	
15	**5 (DB)**	**PTEBT 3211 "Rules of technical operation and safety of transport" 2-1-0-5** **Prerequisites:** **OKT 1210 2-2-0-2** **Post-requisites:** **SUDP 4301 1-2-1-7** **The purpose of studying the discipline is:**knowledge of regulatory documents regulating the operational work of railway transport and studying the basics of organizing safe work. **Contents of the main sections:**construction of railway facilities - track, locomotive and carriage, station, power supply; fundamentals of safety of the transportation process. **Learning outcomes:**know the procedure for classifying permissible traffic safety violations (TSV), the reasons causing TSV in various railway transport facilities, the requirements and norms of PTE, instructions and other documents on issues of design, maintenance and operation of railway technical equipment, ensuring trouble-free operation of railways in all production processes and organizing measures to ensure the safety of the transportation process using innovative and intelligent systems.	
16	**5 (DB)**	**IG 1212 "Engineering Graphics" 1-2-0-1** **Prerequisites: - Postrequisites:** **TPPRR 3217 2-1-0-5** **The purpose of studying the discipline is:**acquisition of theoretical knowledge, practical skills in the field of reading and drawing up design documents. **Contents of the main sections:**general rules for drawing. Formats, title blocks, scales, lines, fonts, graphic representation of materials in the drawing. Geometric constructions. Applying dimensions. Images – views, sections, sections, callouts. Types of connections. Threaded connections. Classification, basic parameters and thread elements. Reading and detailing a general view drawing. Sketches of details from life. **Learning outcomes:**be able to make sketches and drawings of parts, assembly drawings and general view drawings.	
		Baz 06 Basic Module	
17	**5 (DB)**	**EOE 2213 "Electrical Engineering and Fundamentals of Electronics" 1-1-1-3 Prerequisites:** **Mat 1201 1-2-0-1** **Post-requisites:** **ATS 4313 2-1-0-8** **The purpose of studying the discipline is:**study of the basic laws and methods of calculating linear electrical and magnetic circuits. **Contents of the main sections:**analysis of electrical circuits with a single power source. Sinusoidal electrical circuit. Three-phase circuits. A problem with a symbolic method of measuring the sinusoidal current of an electrical circuit. **Learning outcomes:**know about the relationship of physical principles	**// OES 2213 "Fundamentals of Electrical Systems" 1-1-1-3** **Prerequisites:** **Mat 1201 1-2-0-1** **Post-requisites:** **SCBS 4313 2-1-0-8** **The purpose of studying the discipline is:**formation of basic knowledge of a technologist necessary for his activities in the field of electrical engineering. Content **main sections:** electric chains With one source nutrition. Parallel And mixed compoundSinusoidal electrical circuit. Three-phase circuits. Transitional processes V linear chains. Semiconductor devices,converters, amplifiers.

		electromagnetic phenomena and know methods of calculating electrical circuits.	**Learning outcomes:**know the basics of electrical and electronic engineering as applied to the construction of modern electrical and electronic equipment.
18	**5 (DB)**	**MSUK 2214 "Metrology, standardization and quality management" 2-0-1-3** **Prerequisites:** **Mat 1201 1-2-0-1** **Post-requisites:** **OPZhS 3309 2-1-0-5** **The purpose of studying the discipline is**: acquisition of theoretical knowledge in the field of technical regulation, management, assurance and quality control of objects of technical regulation. **Contents of main sections**: basic terms and definitions in the field of technical regulation; legislation in the field of technical regulation; confirmation of conformity in Kazakhstan and its types; methods and means of measurement and control; smooth cylindrical joints; basic concepts of geometric interchangeability. **Learning outcomes**: have the skills to ensure and control the quality of technically regulated objects.	**// SSTI 2214 "Standardization, certification and technical measurements" 2-0-1-3** **Prerequisites:** **Mat 1201 1-2-0-1** **Post-requisites:** **OPTUS 3309 2-1-0-5** **The purpose of studying the discipline is**: acquisition of theoretical knowledge in the field of ensuring interchangeability and its methodological foundations in relation to modern products of technological machines. **Contents of main sections**: smooth cylindrical joints; basic concepts of geometric interchangeability; types of sizes; tolerances and landings; unified principles for constructing tolerance and fit systems for standard connections of machine parts and other products; accuracy quality; system for standardization and designation of surface roughness; waviness, deviations in the shape and location of surfaces and their control. **Learning outcomes**: have skills in design, calculation and selection of accuracy standards based on the principles of ESDP; in the preparation and handling of technical and design documentation.
19	**5 (DB)**	**IG 2215 "Engineering Geodesy" 2-0-1-3 Prerequisites:** **Mat 1201 1-2-0-1** **Post-requisites:** **IPZhD 4311 2-2-0-7** **The purpose of studying the discipline is**: obtaining theoretical knowledge on creating geodetic justification at industrial and construction sites; studying methods of marking work; methods of transferring geometric elements of buildings and structures into nature when carrying out a project on a construction site. **Contents of the main sections:**main types of geodetic surveys: theodolite-tacheometric, geometric and trigonometric leveling; device and schematic diagram of the operation of a tacheometer and level; construction of a topographic plan and route profile. **Learning outcomes:**be able to create a geodetic network, master techniques for taking measurements on the ground, and maintain documentation in accordance with regulatory requirements.	**// PG 2215 "Applied Geodesy" 2-0-1-3 Prerequisites** **Mat 1201 1-2-0-1** **Post-requisites:** **OPPZhD 4311 2-2-0-7** **The purpose of studying the discipline is**: obtaining theoretical foundations for geodetic measurements, mastery of the methodology for creating plans, maps and profiles. **Contents of the main sections:**coordinate systems; geodetic measurements, classification of instruments, methods of measuring angles and lengths, methods of preparing and transferring design data to the area; executive shooting. **Learning outcomes:**know about plan and elevation coordinate systems used in geodesy; about methods of creating geodetic networks; methods for creating topographic maps and plans, modern technologies in the development of geodetic support.

		OTR 07 Module Transport Process Maintenance	
20	**5 (DB)**	**ETS 3216 "Unified Transport System" 2-1-0-5** **Prerequisites:** **OPUD 2303 2-2-0-4** **Post-requisites:** **ITOP 4312 1-2-0-7** **The purpose of studying the discipline is:**formation of a comprehensive understanding of various types of transport, its place and role in the national economy and in the unified transport system, management of the work of the logistics department of a freight forwarding enterprise, optimization of costs associated with the execution of logistics operations. **Contents of the main sections:**transport security and transport management system. Main indicators of transport performance; Types and physical and mechanical properties of cargo. Comprehensive theory of technical operation of transport Technical and operational characteristics of main modes of transport. Industrial transport. Principles and methods for choosing modes of transport. Direct intermodal transport and its effectiveness. Transport hubs in the transportation process. Ways to increase the efficiency of various types of transport. **Learning outcomes:**be able to ensure the rational use of production reserves and resources of the enterprise, as well as ways and prospects for their improvement as elements of a unified transport system, assess production and non-production costs to ensure traffic safety, organize measures to ensure the safety of the transportation process using innovative and intelligent systems.	**// OTEO 3216 "Fundamentals of Freight Forwarding Services" 2-1-0-5** **Prerequisites:** **OPUD 2303 2-2-0-4** **Post-requisites:** **ASUPT 4312 1-2-0-7** **The purpose of studying the discipline is:**providing the necessary general transport training for engineers to manage transportation processes. **Contents of the main sections:**the importance of transport and forwarding services in the transport process. Regulatory and legal framework for transport and forwarding services. Transport and forwarding operations when sending and arriving cargo. Transport and forwarding services for container cargo. Documentation of cargo delivery using electronic document management. **Learning outcomes:**have an understanding of the various types of transport used for the transportation of goods and passengers, depending on the conditions, timing, labor intensity of transportation and other technical and operational indicators, the basic principles of organization and management of the transportation process, understand the basics of electronic turnover document programs, carry out organizational and technological activities on railway and industrial transport.
21	**5 (DB)**	**TPPRR 3217 "Technological processes of loading and unloading operations and warehouse operations in transport" 2-1-0-5** **Prerequisites:** **PM 2209 2-2-0-4** **Post-requisites:** **TURSU 3222 1-1-1-6** **The purpose of studying the discipline is:**familiarization with modern loading and unloading machines, the theory of their calculation, determining the main indicators for choosing types of technologies when designing complex mechanization and automation of loading and unloading and warehouse operations. **Contents of the main sections:**Organization of loading and unloading operations**;**Classification and main technical and operational indicators of loading and unloading machines and automation equipment; Technology and	**// KMAGO 3217 "Integrated mechanization and automation of cargo operations" 2-1-0-5** **Prerequisites:** **PM 2209 2-2-0-4** **Post-requisites:OMPRPT 3222 1-1-1-6** **The purpose of studying the discipline is:**familiarization with complex mechanization and automation of loading and unloading operations and warehouse operations. **Contents of the main sections:**Transport and warehouse complexes in logistics systems; Indicators of the efficiency of organizing loading, unloading and warehouse operations; Automated control system for transport and warehouse complex; Determination of warehouse capacity; Determination of calculation of loading and unloading fronts. Calculation of filling (discharging) fronts; Determining the basis for selection and calculation

		mechanization of loading and unloading packaged cargo;Technology and mechanization of loading and unloading operations with cargo transported in containers and piggybacks;Technology and mechanization of loading and unloading heavy, long, bulk, lumpy cargo; Technical safety in the workplace. Scheduling mechanical tools. **Learning outcomes:**be competent in developing schemes for complex mechanization and automation of loading and unloading operations and warehouse operations, be able to select materials for transport equipment and equipment using information technology, develop designs of machines and equipment taking into account technological, design, aesthetic, economic and other parameters.	warehouses and storage facilities. Calculation of containerized cargo warehouse. Calculation of container warehouse. **Learning outcomes:**have special skills based on professional knowledge and their importance in the transportation process, be able to select materials for transport equipment and equipment using information technology and have the skills to organize the operational maintenance of technical devices and structures in transport.
22	**5 (DB)**	**GTTP 4218 "Freight tariffs and transport law" 2-1-0-8** **Prerequisites:** **OGKR 4220 2-1-0-7** **Post-requisites: --** **The purpose of studying the discipline is:**knowledge of the basics of organizing tariffs for the transportation of goods by modes of transport, ways to optimize tariff policy and correct assessment of factors influencing the transportation tariff, and training in the right to transport goods. **Contents of the main sections:**types of tariffs on railway transport and their differences; methods for determining transportation tariffs; factors influencing the transportation tariff; surcharges and fines included in the transportation tariff; Features and establishment of tariffs for transportation by motor transport; tariffs for transportation by air and water transport. Weighting coefficients and a comprehensive indicator of the efficiency of the transport process. Application of digital technologies in technological processes in railway transport. **Learning outcomes**: have practical skills in justifying and selecting the most effective transport processes and the use of digital technologies in them, studying legal issues in transport transportation. Perform calculation and design activities on railway and industrial transport.	**// TTPPP 4218 "Transport and technological processes of industrial enterprises" 2-1-0-8** **Prerequisites:** **PPGPT 4220 2-1-0-7** **Post-requisites: --** **The purpose of studying the discipline is:**students gain knowledge about the general planning of industrial enterprises, taking into account technological transport processes, the formation of a comprehensive understanding of the role and place of transport in industrial production and its impact on the efficiency of industrial enterprises. **Contents of the main sections:**principles of designing a master plan for industrial enterprises, designing a master plan and transport for industrial enterprises; master plan and transport: open-pit mining, processing plants, underground mining, metallurgical and engineering plants. **Learning outcomes:**have an idea of rational general plan schemes, methods for assessing various layout schemes of objects under construction; about the specifics of the work of a number of enterprises involved in the extraction and processing of minerals. Be able to carry out planning and implementation of projects in railway and industrial transport.
		PTP 08 Module Preparation of the transport process	
23	**6 (DB)**	**UEP 2219 "Design and operation of the track" 2-2-0-4** **Prerequisites:** **OKT 1210 2-2-0-2** **Post-requisites:** **OPZhS 3309 2-1-0-5** **The purpose of studying the discipline is:**formation of an idea about	**// EPP 2219 "Operation of access roads" 2-2-0-4** **Prerequisites:** **OKT 1210 2-2-0-2** **Post-requisites:** **OPTUS 3309 2-1-0-5** **The purpose of studying the discipline is:**students gain knowledge about

		the railway track as a complex engineering structure, the condition of which determines the continuity and safety of train traffic, as well as the track facilities, the basis of which is the track maintenance system. **Contents of the main sections:**upper and lower structures of railway tracks; purpose and device of a turnout switch. Types of turnouts and types of turnout streets. Railroad crossings, road barriers and signs. Maintenance and repair of railway tracks, digital technologies in flaw detection. **Learning outcomes**: be able to draw up and solve engineering problems relating to structures and objects of railway transport tracks, use digital technologies in transport processes. Fulfill calculation and design activities in railway and industrial transport.	access roads as a complex engineering structure depend on the condition on which the safety of the movement of freight trains depends, on the track facilities, the basis of which is the track maintenance system. **Contents of the main sections:**upper structure of access roads; lower structure of access roads; organization and classification of track works; modern track machines. **Learning outcomes:**drawing up and solving engineering problems related to access roadspaths of industrial enterprises, use digital technologies in transport processes. Be able to count on the strength, stability, reliability of mechanisms and machines, equipment and structures during design and operation.
24	**5 (DB)**	**OGKR 4220 "Organization of cargo and commercial work" 2-1-0-7** **Prerequisites:** **ETS 3216 2-1-0-5** **Post-requisites:** **GTTP 4218 2-1-0-8** **The purpose of studying the discipline is:**obtaining sufficient knowledge of the subject and acquiring skills in organizing the work of an enterprise to carry out cargo and commercial operations and technology for transporting goods, the best use of cars in time, carrying capacity for the safety of goods, the use of progressive technology and modern computer technology. **Contents of the main sections:**technical means of cargo and commercial work, progressive methods of organizing transportation in transport logistics systems, constructing tariffs and the organizational structure of managing cargo and commercial work. **Learning outcomes:**know the rules for the transportation of goods, the rules for the transportation of oversized and dangerous goods, have knowledge in the field of organizing car flows from loading points, implementing measures to ensure the safety of train traffic, the safety of transported goods and environmental protection during the transportation of various goods. Providing services for registration of transportation of passengers and cargo luggage by rail using information technology.	**// PPGPT 4220 "Rules for the transportation of goods on industrial transport" 2-1-0-7** **Prerequisites:** **OTEO 3216 2-1-0-5** **Post-requisites:** **TTPPP 4218 2-1-0-8** **The purpose of studying the discipline is:**students obtain knowledge of the specific properties and volumetric-mass characteristics of cargo, as well as the principles of their placement and securing on railway rolling stock and studying the technical conditions for placing and securing cargo, the procedure and conditions for the transportation of liquid cargo and dangerous goods. **Contents of the main sections:**technical means of cargo work, progressive automated methods of organizing transportation, modern methods of transport and forwarding services for enterprises, transportation of goods in direct, intermodal and international communications, general requirements for the placement and securing of cargo on rolling stock.. Means of securing cargo in cars. **Learning outcomes:**be able to correctly classify cargo and determine its group in the tariff, planned and training nomenclature; select the type of container, packaging materials and carry out strength calculations in accordance with the transport characteristics of the cargo. Providing services for registration of transportation of industrial goods using information services.
25	**5**	**UER 3221 Operations Management 1-1-1-5**	**// ORSDU 3221 "Organization of the work of railway stations and**

	(DB)	**Prerequisites:** **OPUD 2303 2-2-0-4** **Post-requisites:** **TURSU 3222 1-1-1-6** **SUDP 4301 1-2-1-7** **Purpose studying disciplines is:** studying species railway transport, gaining knowledge in the field of effective use of technical equipment of railway transport taking into account the volume of work, the development of its technical means, both in conditions current operation, as well as for the near and long term. **Contents of the main sections:**car flow organization system, organization local work, technical rationing operational work of sections and divisions of railways, traffic schedule, throughput and carrying capacity. Organization train movements. Organization and management of shunting work at stations. Development of train schedules. Access and transportation ability of railway lines. **Learning outcomes:**know about basic management principles operational work railway stations And nodes V modern conditions. Be able to organize activities to ensure safety of the transportation process using innovative and intelligent systems.	**dispatch control" 1-1-1-5 Prerequisites:** **OPUD 2303 2-2-0-4** **Post-requisites: OMPRPT** **3222 1-1-1-6** **SUDP 4301 1-2-1-7** **The purpose of studying the discipline is:**obtaining theoretical and practical knowledge in coordinating the work of the operational and administrative department (including the deputy department, engineers, department duty officers, train dispatchers, dispatchers (car distributor), operators at the department duty officer (for special transportation and cargo work), on the implementation of assigned tasks volumes of transportation, in accordance with the technical plan, while unconditionally ensuring the safety of train traffic. **Contents of the main sections:**dispatch control in railway transport. Effective use of rolling stock and technical equipment. Transportation Process Directorate. Ensuring the delivery of local cargo, provision of wagons for unloading. Organization of training for employees of the operational and administrative department. Operational planning of train and freight operations of railways. **Learning outcomes:**be able to draw up reports on the implementation of operational indicators with an analysis of the reasons for non-fulfillment (decade, month, quarter, year); predict the work of the dispatch apparatus of the operational and administrative department of the department and stations in fulfilling the daily shift plan; carry out dispatch control over the movement of trains on serving routes (sections); systematizes knowledge about the implementation of the established volume of transportation and the effective use of rolling stock of technical equipment;
26	**5** **(DB)**	**TURSU 3222 "Technology for controlling the operation of a station and units" 1-1-1-6** **Prerequisites:** **OPUD 2303 2-2-0-4** **UER 3221 1-1-1-5** **Post-requisites:** **TTPPP 4218 2-1-0-8** **The purpose of studying the discipline is:**mastering the basic principles of managing the operation of railway stations and hubs, the fundamentals of technology, a system of quantitative and qualitative performance indicators in the context of the transition to a new technology for operational transportation management. **Contents of the main sections:**types of railway transport, principles of their operation, industrial transport systems and station location; technical means at the station; theory on	**// OMPRPT 3222 "Organization of shunting and train work on industrial transport" 1-1-1-6** **Prerequisites:** **OPUD 2303 2-2-0-4** **ORSDU 3221 1-1-1-5** **Post-requisites:** **TTPPP 4218 2-1-0-8** **The purpose of studying the discipline is:** obtaining theoretical and practical knowledge o methods for rationing shunting work on industrial railway transport. Method of collection and processing information for planning shunting work at an industrial railway transport, different using new information structural model and modernized traction algorithm calculations taking into account the dependence of the locomotive traction force on the position

		optimization of production processes at railway stations and hubs. **Learning outcomes:** use the theoretical foundations of the discipline being studied in productionconditions; choose technical means for processing car flows at stations and on layover tracks; be able to implementation planning Andimplementation projects onrailway and industrial transport.	driver controller and the type of shunting half-flight, which allows you to evaluatefuel and time costs and choose the optimal train movement option. **Contentmain sections:** definerequired quantity of rolling stock for loading. Planned work on separating freight trains and wagons at external and internal joints. Use of a working fleet of wagons on a road section. Approach of wagons with local cargo of empty wagons for loading. Assembly of empty cars after unloading and their adjustment. Distribution of wagons in order for unloading. Standardization of shunting work. **resultstraining:** be able toorganize shunting work at industrial enterprises; control the execution of the information-structural model of the PTS for entering and processing information for planning shunting work on the railway railway, conduct operational planning of train and cargo work of the department, railway stations, to synthesize a methodology for traction calculations, adapted to the conditions of shunting work on railway railways.
		ONTS 09 Module Ensuring vehicle reliability	
27	**6 (PD)**	**SUDP 4301 "Train Traffic Control System" 1-2-1-7 Prerequisites:** **UER 3221 1-1-1-5** **TURSU 3222 1-1-1-6** **Post-requisites:** **LT 4207 2-1-0-8** **The purpose of studying the discipline is:** formation of a comprehensive understanding of the methods and means of dispatch control of train traffic, management and regulation of this process. **Contents of the main sections:** organization of train traffic control.Motion control process management trainsAutomation of information support for train dispatchers. Automated dispatch control systems. Shift-daily planning of train and freight work. Ensuring train safety. Intelligent train driving systems. **Learning outcomes:** have practical skills in the techniques and methods of train traffic dispatch control; know the basic principles and areas of application of intelligent train driving systems. Carry out production and management activities in railway and industrial transport.	
28	**5 (PD)**	**PP2 3302 "Industrial practice 2" 0-10-0-6 Prerequisites:** **PP1 2208 0-10-0-4** **ETS 3216 2-1-0-5** **Post-requisites:** **PP 4306 0-10-0-8** **SUDP 4301 1-2-1-7** **The purpose of studying the discipline is:** consolidation and deepening of the theoretical knowledge acquired by students at the university while studying special disciplines, acquisition of practical skills in organizing cargo and commercial work of stations, events aimed at ensuring traffic safety, experience in organizational and educational work, familiarization with general issues of economics, organization and labor protection at enterprises, studying the production structure of the enterprise, interaction with other structural divisions. **Contents of the main sections:** regulations on the railway station; rules of technical operation of railways; instructions for	

		signaling on the railways of the Republic of Kazakhstan; TPA and local instructions for the reception, departure of trains and shunting work; technological process of the station. **Learning outcomes:**be able to develop measures to ensure safety in various conditions and at various stages of the transport process; ability to control the quality of technological processes, materials and finished products; be able to build models of professional tasks and interpret the results obtained, adapt to external conditions and implement standard technological transport processes, as well as develop and implement new types of transport services; be able to analyze and optimize the operation of the transport system at all levels, apply the acquired knowledge when solving specific scientific, technical, production and economic problems in the field of organizing transportation, traffic and operation of transport.
29	**6 (PD)**	**OPUD 2303 "Organization of transportation and traffic management" 2-2-0-4** **Prerequisites:** **OKT 1210 2-2-0-2** **Post-requisites:** **UER 3221 1-1-1-5** **The purpose of studying the discipline is:**formation of professional competence of students in the field of effective use of technical equipment of transport, taking into account the volume of work, the ability to solve issues of development of its technical means both in the conditions of current operation and in the near and long term; provide an optimal system for managing cargo flows, based on logistics principles and research of transport operations, resolve issues of the transportation process; in order to fully satisfy transportation requests. **Contents of the main sections:**organization of work of railway and transport hubs. Management of car flows on the railway network. Train schedule. Line capacity and carrying capacity. Traffic control in railway and industrial railway transport. Rolling stock utilization indicators. Operational management of operational work. Intelligent train traffic control systems. **Learning outcomes:**know about the organization and management of various types of transport; on international passenger transportation; about the operation of railway stations, about the use of intelligent traffic control systems in railway transport.
		OTIA 10 Module Occupational Safety and Final Certification
thirty	**5 (PD)**	**OT 4304 "Occupational Safety and Health" 2-0-1-7** **Prerequisites:** **PTEBT 3211 2-1-0-5** **Post-requisites:** **ATS 4313 2-1-0-8** **The purpose of studying the discipline is:**familiarizing students with the legislative acts of the Republic of Kazakhstan in the field of labor protection, with the procedure for recording and investigating accidents and occupational diseases at work, with the safe organization of the workplace, with the hazards of the living environment and the sustainability of business objects. **Contents of the main sections:**the role, main tasks and organizational structure of the republican civil protection services, basic principles and methods of protecting the population in emergency situations. Occupational health and safety management system, industrial sanitation and occupational health, fire and electrical safety. **Learning outcomes:**acquisition of practical skills in matters of life safety and the use of instruments, apparatus and equipment for measuring parameters of the working environment, methods and technical means of protection from hazardous and harmful production factors, and provision of first aid.

31	**5 (PD)**	**PID 4305 "Design and research activities" 1-2-0-8 Prerequisites: MNI 3111 1-2-0-6 Post-requisites:-** **The purpose of studying the discipline is:**developing students' skills in planning the transportation process on all types of transport and implementing design and research activities on organizing transportation, traffic and operation of transport, studying the principles of managing the operational work of railways and industrial enterprises. **Contents of main sections:**general provisions for completing the thesis/project. Methodological characteristics of the study (relevance, controversy, problem, topic, goal, object, subject, hypothesis, research objectives). Legislative acts and technical standards in force in transport. Research Resources. Structure and content of research stages. Rules for preparing a thesis/project. Bibliography of the thesis/project. The procedure for submitting and defending your thesis/project. Processing the results of a study on the management of operational work of railways. Registration of the results of the experiment/research. Formation of a design solution to a research problem. Analysis of the state of transport provision of cities and regions. Forecasting the development of regional and interregional transport systems; Principles of railway operational management. **Learning outcomes:**determine the content of the thesis/project; plan research activities; organize and carry out design and research activities; process and document research results; formulate a solution to a design and research problem; present research results for public protection.
32	**5 (PD)**	**PP 4306 "Pre-graduation practice" 0-10-0-8 Prerequisites: PP1 2208 0-10-0-4 PP2 3302 0-10-0-6 Post-requisites: --** **The purpose of studying the discipline is:**consolidation of practical knowledge and skills through a deeper study of the transportation process, methods of organizing and controlling train traffic and vehicle safety, applying the acquired knowledge and practical skills when performing diploma design and professional activities. **Contents of the main sections:**transportation process technology. Organization of service in transport. Preparation of train and technical documentation. Familiarization with the technical and operational characteristics of the station (enterprise); main documents regulating the work of the enterprise. Occupational safety briefing. Performing work as a receiver of cargo and luggage with wagons for loading, unloading, and receiving loaded wagons. **Learning outcomes:**the ability to obtain source materials for the development of a thesis (project), the basic technical solutions of the thesis (project) agreed with the enterprise.
33	**8 (PD)**	**IA 4307 "Final certification" 0-0-0-8 Prerequisites: MNI 3111 1-2-0-6 SUDP 4301 1-2-1-7 OT 4304 2-0-1-7 Post-requisites:-** **The purpose of studying the discipline is:**systematization and consolidation of theoretical and practical knowledge, skills and abilities for future professional activities, as well as their application in solving specific production problems. **Contents of main sections:**Contents of project and research activities. General provisions of the thesis. Methodological characteristics of the study (relevance, controversy, problem, topic, goal, object, subject, hypothesis, research objectives). Technological standardsand standards. Research Resources. Structure and content of research stages. Rules for preparing a thesis/project. Order

		submissions for defense and self-isolation of the thesis/project. Seminar on the implementation of research stages. Methodological characteristics of the study. Planning of project and research activities. Carrying out the main stages of the study. Processing of research results. Formation of a design solution to a research problem. **Learning outcomes:**independent development of new production technologies; assessing data from the analysis of mechanisms of wear, corrosion, loss of structural strength; ability to apply legislative acts and technical standards in force in transport, including traffic safety, working conditions, environmental issues; take into account the socio-psychological foundations of team management; determine parameters for optimizing logistics transport networks; use modern information technologies as a tool for optimizing management processes in transport complex; develop models of promising logistics processes of transport enterprises, perform optimization calculations of basic logistics processes.	
		POrg11 Module Professional and Organizational	
34	**5 (PD)**	**PSTP 3308 "Rolling stock and train traction" 1-2-0-6 Prerequisites: OKT 1210 2-2-0-2 Post-requisites: ITOP 4312 1-2-0-7** **The purpose of studying the discipline is:**formation of an integral idea of the rolling stock of railway transport. **Contents of the main sections:**classification and design diagrams of traction rolling stock. Types of diesel locomotive transmissions. Locomotive diesel engines and auxiliary units of locomotives. Formation of tangential traction force, traction characteristics of locomotives. Forces of main and additional resistance to train movement. Equation of train motion and methods of solution. Train braking forces and solving braking problems. Using digital technologies to ensure optimal train movement. Contact network. Maintenance and repair of locomotives. Wagon rolling stock. **Learning outcomes:**have practical skills in the field of using various types of rolling stock and performing traction calculations;know the basic principles of optimal train control using digital technologies.	**// OTTS 3308 "Fundamentals of Transport and Technical Equipment" 1-2-0-6 Prerequisites: OKT 1210 2-2-0-2 Post-requisites: ASUPT 4312 1-2-0-7** **The purpose of studying the discipline is:**the formation of a comprehensive understanding of the role of railway transport in industrial production, the design features of rolling stock and the technology of using railway transport in industrial production. Contents of the main sections: locomotives of industrial railway transport. Special rolling stock for industrial railway transport. Types of diesel locomotive transmissions. Locomotive diesel engines and auxiliary units of locomotives. Formation of tangential traction force, traction characteristics of locomotives. Forces of main and additional resistance to train movement. Equation of train motion and methods of solution. Train braking forces and solving braking problems. Intelligent locomotive control systems. **Learning outcomes:**have practical skills in the field of application of railway transport in industrial production and performing traction calculations;know the principles and applications intelligent locomotive control systems.
35	**5 (PD)**	**OPZhS 3309 "Fundamentals of railway station design" 2-1-0-5 Prerequisites:UE P 2219 2-2-0-4**	**// OPTUS 3309 "Fundamentals of the design of transport devices and structures" 2-1-0-5 Prerequisites: EPP2219 2-2-0-4**

		Post-requisites: **IPZhD 4311 2-2-0-7** **Purpose studying disciplines is:** knowledge methodsdesign of main railway stations and junctions. **Contents of the main sections:**general design regulations iron roads, separate points, Jobmarshalling station, operation of the hump and calculation of the hump process. **Learning outcomes:**know the classification of intermediate stations, the purpose of stations and their design. Perform calculation and design activities on railway and industrial transport	**Post-requisites:** **OPPZhD 4311 2-2-0-7** **Purpose studying disciplines is:** development methodsdesigning the main elements of railway stations and junctions and highways, designing communication routes and their maintenance. Content **mainsections:** appointment And classificationrailway stations; basics of station design; main provisions design iron roads; station ways Andoverall distances; arrangement and layout of railway stations. **Learning outcomes:**know the basic diagrams and designs of individual elements of stations and the design of highway intersections. Carry out planning and implementation of projects in railway and industrial transport.
36	**5 (PD)**	**UPP 3310 "Passenger Transportation Management" 2-1-0-6** **Prerequisites:** **UER 3221 1-1-1-5** **Post-requisites:** **ITOP 4312 1-2-0-7** **SUDP 4301 1-2-1-7** **The purpose of studying the discipline is:**formation of knowledge that provides a systematic approach to solving theoretical and practical problems of transport services for passengers in a market economy, improving the quality and efficiency of transport services. **Contents of the main sections:**types of passenger transportation and mainindicators. Passenger stations. The structure of the station complex. Automated system "Express". **Learning outcomes:**know about modern systems and technical means of managing passenger transportation on railway transport. Realizeservice and operational activities in railway and industrial transport.	**// SVPT 3310 "Special types of industrial transport" 2-1-0-6 Prerequisites:** **ORSDU 3221 1-1-1-5** **Post-requisites:** **ASUPT 4312 1-2-0-7** **SUDP 4301 1-2-1-7** **The purpose of studying the discipline is:**research of special types of transport and obtaining knowledge in the field of effective use of special types of transport in operating conditions. **Contentmain sections:**basictypes and classification of special types of transport. Conveyor transport. Ropeways. Monorails. Pneumatic container, pneumatic and hydraulic transport. **Learning outcomes:**acquire practical skills in choosing the calculation and operation of special types of transport; be able to design special types of transport. Be able to provide services for registration of transportation of industrial goods using information services.
		ASS 12 Module Automation of communication systems	
		IPZhD 4311 "Research and design of railways" 2-2-0-7 **Prerequisites:** **OPZhS 3309 2-1-0-5** **Post-requisites:** **ATS 4313 2-1-0-8** **The purpose of studying the discipline is:**mastering the design and calculation methods of new and reconstructed railways; studying	**// OPPZhD 4311 "Fundamentals of design of industrial railways" 2-2-0-7** **Prerequisites:** **OPTUS 3309 2-1-0-5** **Post-requisites:** **SCBS 4313 2-1-0-8** **The purpose of studying the discipline is:**mastering the design and calculation methods of access roads; formation of development on its

37	**6 (PD)**	engineering survey methods for collecting and processing information about the design area. **Contents of the main sections:**theory and practice of development and decision-making when choosing basic technical parameters project. Methods of engineering survey and design of railway construction. **Learning outcomes**: know about the types of engineering surveys and the main stages of design in the process of transportation on railways. Develop design documentation for the design of technical objects.	based on comprehensive scientifically based projects for the construction of new and reconstruction of existing industrial railways. **Contents of the main sections:**theory and practice of development and decision-making when choosing the main technical parameters of a project. Methods of engineering survey and design of construction of industrial railways. **Learning outcomes**: know about the main design stages in the transportation process on industrial railways. Perform calculation and design activities on railway and industrial transport.
38	**5 (PD)**	**ITOP 4312 "Innovative technologies in transportation organization"** **1-2-0-7** **Prerequisites:** **TURSU 3222 1-1-1-6** **Post-requisites:** **ATS 4313 2-1-0-8** **The purpose of studying the discipline is:**to give an idea of the automated railway transport management system, the composition of subsystems and their functional purpose, as well as the formation of students' concepts of innovative technologies in the organization of the transportation process. **Contents of main sections:**information technologies in the transportation process. Automated control systems for railways transport. Transportation process management technology - modern development trends. Intelligent innovative technologies in transport. **Learning outcomes:**know the functionality of an automated railway transport control system; acquire skills in working at automated workstations for railway workers. transport; have an understanding of innovative technologies in the transportation process, the use of intelligent innovative technologies in railway transport;carry out development and make decisions for different types of planning and determine optimal solutions for changing information flows in transport.	**// ASUPT 4312 "Automated control systems for industrial transport"** **1-2-0-7** **Prerequisites:OMPRP** **T 3222 1-1-1-6** **Post-requisites:** **SCBS 4313 2-1-0-8** **The purpose of studying the discipline is:**study means of automation of transport, loading and unloading processes and document flow at industrial enterprises. **Contents of main sections:**automation of technical and commercial inspection of rolling stock; automation equipment for the main types of industrial transport; automation of loading, unloading and warehouse operations. Intelligent automated control systems for industrial transport. **Learning outcomes:**have knowledge about automation of document flow and interaction with automated control systems in mainline transport, about the use of intelligent automated systems in industrial transport; carry out organizational and technological activities in railway and industrial transport.
39	**5 (PD)**	**ATS 4313 "Automation, telemechanics and communications" 2-1-0-8** **Prerequisites:** **UEP 2219 2-2-0-4** **Post-requisites: -** **The purpose of studying the discipline is:**training students in methods and means of managing transportation processes, train movement on	**// SCBS 4313 "Signaling, centralization, interlocking and communication" 2-1-0-8** **Prerequisites:** **EPP 2219 2-2-0-4** **Post-requisites: -** **The purpose of studying the discipline is:**giveunderstanding of device operation providing safety movement Withapplication

		railway transport using modern automation, telemechanics and communications devices, as well as advanced technologies that ensure savings in labor and energy resources, traffic safety in various operating conditions. **Contents of the main sections:**main automation and telemechanics devices on the stage and at the station. Types of communications used in railway transport. Intelligent PBX systems. Learning outcomes: master the methods and means of controlling the transportation process using intelligent systems of railway automation, telemechanics, communications while ensuring traffic safety and labor protection. Carry out service and operational activities at railway and industrial transport.	innovative and intelligent systems. **Contents of main sections:**classification of alarm systems, centralization, blocking and communication; electrical and route-relay centralization; automatic and semi-automatic blocking; systems for technical diagnostics and monitoring of signaling systems. Intelligent signaling systems. **Learning outcomes:**have knowledge in the field of intelligent alarm systems, centralization, interlocking and communication. Be able to ensure the safety of the transportation process in transport.

Head of the Department of PT **AskarovB.Sh.**