

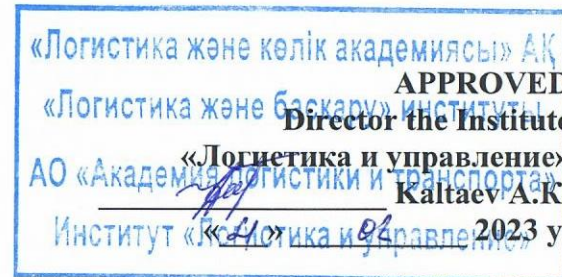


AGREED

Head of the Department of Dispatching Transportation
Management of LLP «TransCom»

Kosybaev K.K.

2023 y.



CATALOG OF DISCIPLINES OF THE COMPONENT BY CHOICE

EDUCATIONAL PROGRAM

7M11353 - Economy, ecology and infrastructure in high-speed rail transport

Level of training: master's degree in scientific and pedagogical

Period of study: 2 years

Year of admission: 2023 y.

Module	Cycle	Component	Name of the discipline	Total labor intensity		Semester	Learning outcome	Brief description of the discipline	Prerequisites	Post-requisites	Department
				in academic hours	in academic credits						
1	2	3	4	5	6	7	8	9	10	11	12
Module 3 – Economic and managerial competencies	BD	EC	Theory of electric transport systems	150	5	3	LO5	The basics of the theory of electric traction are described, traction electric drive systems for different types of electric rolling stock are considered, methods for calculating traction power supply systems and traction substations are considered. The basic schematic diagrams of the traction electric drive and traction substations when using direct and alternating current are given. The analysis of possible operating conditions of electric transport in steady-state and transient modes is illustrated by graphs.	Probability theory and mathematical statistics; System analysis; Theory of transport systems, modeling	Master's research work, Research practice, Final certification	ОТ0Т
	BD	EC	Transport management and logistics business	150	5	3	LO6	The discipline is an introduction to the process of transport and logistics business management and studies the main business tasks, methods of analysis and ways to solve planning problems in revenue, project and resource management. Within the framework of the discipline, methods and methods of assessing the economic and social conditions of entrepreneurial activity in the transport field are studied.	Organization and management of production activities, Economy of high-speed highways	Master's research work, Research practice, Final certification	ОТ0Т

	BD	EC	Secure circuits, computer and communication technologies	150	5	3	LO5	Application of information and communication technologies in the transport complex. Study of requirements for elements of computer and communication technologies used in transport to ensure traffic safety, technical and organizational measures to ensure cybersecurity in transport. Acquisition of skills in failure analysis, fault analysis, reliability analysis of technical means and communication technologies. Application of security risk analysis methods and control mechanisms over them.	Probability theory and mathematical statistics; System analysis; Theory of transport systems, modeling	Master's research work, Research practice, Final certification	OTOT
Module 2 – Research competencies	BD	EC	Probability theory and mathematical statistics	90	3	1	LO6	Probability theory and mathematical statistics studies the simplest theorems of probability theory, systems of random variables, mathematical models for analyzing random phenomena for their adequate description and understanding, methods for solving standard problems using basic analytical tools, mathematical methods for constructing probable models and implementing these methods on real problems of natural science, practical activity and statistical processing of real data.	Bachelor's degree disciplines	Secure circuits, computer and communication technologies; Theory of electric transport systems	GE
	BD	EC	System analysis	90	3	1	LO6	The discipline studies the issues of conducting research by performing a sequence of pre-planned actions with any variable or permanent objects of research, as well as with complex ones. The objects can be a variety of problems detected during the development of new and functioning of previously created systems, as well as performed in the preparation and decision-making processes themselves.	Bachelor's degree disciplines	Secure circuits, computer and communication technologies; Theory of electric transport systems	GE
Module 4 – Professional competencies	BD	EC	HSR rolling stock	90	3	2	LO7	The discipline allows you to study the world concepts of the development of the design of modern rolling stock, safety and environmental friendliness of the operation of high-speed railway rolling stock. Develops skills and abilities in the creation, design, operation, diagnostics, identification of reserves, identification of the causes of malfunctions and deficiencies in operation, as well as taking measures to eliminate them and improve the efficiency of using modern high-speed railway rolling stock.	Organization and management of production activities	Transport security and management technology	RS
	BD	EC	Interaction of track and rolling stock	90	3	2	LO7	The study of the structural features of the railway track, mechanical processes occurring in rolling stock and in the railway track when they are exposed to each other, deformations and mechanical stresses arising in interacting structures. Formation of professional competencies in the application of methods for calculating and evaluating the strength of rolling stock and track based on knowledge of the laws of statics and dynamics of solids.	Organization of design and survey activities	Transport security and management technology	RS

	BD	EC	Passenger complex of high-speed highways	120	4	2	LO12	Organization of work and operation of the passenger complex of high-speed highways. Improvement of technology and development of facilities of the passenger complex of railways and high-speed highways. The technology of operation of station complexes, intermediate separate points, head passenger and passenger technical stations. The placement of the main devices and structures at separate points, as well as the placement of stations in urban conditions. Determination of technological standards for the performance of train handling operations.	Organization of design and survey activities	Public transport planning, Transport security and management technology	OTOT
	BD	EC	Technology and organization of passenger transportation	120	4	2	LO12	The discipline examines the development of modern transport complexes of cities and regions, rational interaction of various modes of transport in the organization of transportation of passengers, baggage, cargo and mail. It allows you to gain skills in planning and distributing passenger traffic on the transport network, developing optimal options for the formation plan and schedule of passenger trains and analyzing the performance of operational indicators of passenger transportation on high-speed rail transport.	Organization of operation and management of train traffic on the HSR	Public transport planning, Transport security and management technology	OTOT
Total volume (variable part)				450	15						

Acting Head of the Department
 "Organization of transportation and operation of Transport"



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