

AGREED

Deputy Chief

«Almaty power supply distance»

branch of NC KTZ JSC -

«Almaty branch of the backbone network»

Orymbaev B.I.

«24» 03 2023

«Автоматтандыру және телекоммуникациялар» институты  
«Академия логистики и транспорта» институты  
Институт «Информатика и телекоммуникации»

I APPROVE  
Director of the Institute  
"Automation and telecommunications"  
Toygozhinova A.Zh.  
"24" 03 2023

### CATALOG OF ELECTIVE DISCIPLINES

EDUCATIONAL PROGRAMS

7M07149 - Electrical power engineering

Education level: master's degree

Duration of study: 1,5 years

Year of admission: 2023 y.

Module	Cycle	Component	Name of the discipline	Overall labor intensity		Semester	Learning outcome	Brief description of the discipline	Prerequisites	Postrequisites
				in academic hours	in academic loans					
1	2	3	4	5	6	7	8	9	10	11
Module 3 – Research Competencies	BD	EC	SMART technologies in transport	270	9	1	LO 1, 4	Рассматриваются и изучаются The intellectual technologies used in railway transport are considered and studied. The basic concepts of the current state and prospects for the development of railway transport infrastructure based on SMART technologies are described. Familiarization of students and the formation of skills for assessing the improvement of operational safety of railway infrastructure facilities, taking into account the development of computer technologies, software and artificial intelligence. Active teaching methods and brainstorming are used.	Undergraduate disciplines	ERWM, Industrial practice

			Lean manufacturing				LO 4	The discipline studies the basics of organization management based on the principles of lean production: minimizing all types of losses in the course of activity, achieving the maximum possible result in the shortest possible period of time, rational use of all types of resources, improving aspects of the organization's activities, involving employees in technological processes; formation of lean thinking among future managers, correlated with relevant ideas for the modern world concepts of sustainable development and conscious consumption.	Undergraduate disciplines	ERWM, Industrial practice
Module 5 – Professional Competencies	PD	EC	Rational resource conservation	270	9	1	LO 2	The methods of resource-saving management at industrial enterprises are analyzed depending on the factors and the sphere of use of material resources. The objectives of enterprises in the field of resource conservation are studied by determining the correlation between the sources and causes of losses of material resources at industrial enterprises, rational use of natural resources and resource conservation, international experience in the field of environmental protection and sustainable use of natural resources to ensure economic and energy security, focused on planning and forecasting promising areas of development in the field of ecology and rational use of natural resources.	Bachelor's majors.	Final assessment
			Energy-saving technologies and energy inspection in the electric power industry				LO 7	When studying the discipline, questions are considered on the principles, methods and technical means of rational use of electricity and reducing energy losses in the power supply system of an industrial enterprise, providing consumers with electric energy with standardized quality, reliability and efficiency. Within the framework of the discipline, guest lectures are provided by top managers and specialists of scientific and design institutes. Teaching methods - case-study, group	Bachelor's majors.	Final assessment



Module 5 – Professional Competencies	PD	EC	Electrotechnical complexes and electric drive of technological processes	180	6	2	LO 6	discipline, guest lectures are provided by top managers of JSC NC KTZ.	Bachelor's majors.	Industrial practice, Final assessment	
			Electrical installations in technological processes					LO 6			When studying the discipline, the issues of the use of electrical installations in technological processes with an automated electric drive and the determination of parameters under various modes of its operation are considered. The task of the discipline is to study the interaction of elements in the technological processes of systems. Teaching methods: teamwork, discussions, individual tasks. Within the framework of the discipline, guest lectures are provided by top managers of energy companies.
			<b>TOTAL</b>					<b>1080</b>			<b>36</b>

Head of the Department «Energy»

Egzekova A.T.