School of Transport Engineering and Logistics named after M.Tynyshpayev
«Logistics» direction

EDUCATIONAL PROGRAM

8D11303 Sustainable logistics (scientific and pedagogical)

Code and classification of the field of education: **8D11 Services**
Code and classification of training directions: **8D113 Transport services**
Group of educational programs: **D148 Logistics (by industry)**
Level based on NQF: **8**
Level based on IQF: **8**
Study period: **3**
Amount of credits: **180**

Almaty 2025

Educational program 8D11303 «Sustainable logistics» approved at the meeting of the Academic Council of Satbayev University.

Protocol No. 10 dated March 6, 2025.

Reviewed and recommended for approval at the meeting of the Educational and Methodological Council of Satbayev University.

Protocol No. 3 dated December 20, 2024.

The Educational Program 8D11303 «Sustainable logistics» was developed by the Academic Committee in the field of study 8D113 Transport services.

Full name	Academic degree / title	Position	Workplace	Signature
Chair of the Academic Committee:				
Bektilyovov Aldabergen Yusupovich	PhD	Acting Head	Satbayev University	
Faculty members:				
Bekzhanova Saule Ertaevna	Doctor of Technical Sciences, Professor	Professor	Satbayev University	
Mukhanova Gulmira Samudinovna	Candidate of Technical Sciences, Associate Professor	Professor	Satbayev University	
Tymbaeva Zhazira Muratbekovna	Candidate of Economic Sciences	Associate Professor	Satbayev University	
Izbairova Aliya Serikovna	Candidate of Technical Sciences, Associate Professor	Associate Professor	Satbayev University	
Kiseleva Olga Gennadievna	Candidate of Technical Sciences	Associate Professor	Satbayev University	
Employers:				
Tansykkozshin Aidos Dauletovich	-	General Director	LLP "ZhebeLogistics"	
Sharubekov Murat Nesipbekovich	Candidate of Technical Sciences	Advisor to the General Director	LLP "Azurit Railway Solutions"	
Students:				
Seidilda Shugyla	-	2nd-year student	Satbayev University	

Table of contents

List of abbreviations and designations

EP - educational program
NRK - National Qualification Framework
IRK - Industry Qualification Framework

1. Description of educational program

EP 8D11303 Sustainable Logistics is developed in accordance with the requirements to the level of training of doctoral students, which are determined on the basis of the Dublin descriptors of the third level of higher education (doctoral studies) and reflect the mastered competences expressed in the achieved learning outcomes.

2. Purpose and objectives of educational program

Purpose of EP: Training of scientific and pedagogical personnel with analytical and systemic thinking, capable of offering effective solutions in educational and scientific activities in the conditions of sustainable development.

Tasks of EP:

- To develop the ability to design and conduct scientific research to produce unique, meaningful and original knowledge that can contribute to the advancement of the scientific field;
- Formation and improvement of pedagogical skills based on the application of modern teaching methods and effective interaction with students;
- development of skills to analyse existing data, identify new ways of solving scientific problems, develop new methods, approaches or models in the field of sustainable logistics;
- formation of a scientific environment that meets the modern challenges and needs of science and society;
- developing skills in modelling and optimising logistics processes to minimise carbon footprint at different stages of the supply chain (from raw material extraction to delivery to the end consumer).

3. Requirements for evaluating the educational program learning outcomes

As a result of mastering the EP modules, doctoral students develop theoretical knowledge, skills and practical skills necessary to carry out all types of scientific and pedagogical activities in the field of logistics. As a result of training the graduate of OP develops research skills to carry out scientific research and experiments in their professional field, to develop effective solutions based on scientific methodology and decision-making methods.

The graduate is awarded the qualification of PhD (Doctor of Philosophy) on EP 8D11303 - ‘Sustainable Logistics’

4. Passport of educational program

4.1. General information

№	Field name	Comments
1	Code and classification of the field of education	8D11 Services
2	Code and classification of training directions	8D113 Transport services
3	Educational program group	D148 Logistics (by industry)
4	Educational program name	8D11303 Sustainable logistics
5	Short description of educational program	EP 8D11303 Sustainable Logistics is developed in accordance with the requirements to the level of training of doctoral students, which are determined on the basis of the Dublin descriptors of the third level of higher education (doctoral studies) and reflect the mastered competences expressed in the achieved learning outcomes.
6	Purpose of EP	Training of scientific and pedagogical personnel with analytical and systemic thinking, capable of offering effective solutions in educational and scientific activities in the conditions of sustainable development.
7	Type of EP	Innovative EP
8	The level based on NQF	8
9	The level based on IQF	8
10	Distinctive features of EP	no
11	List of competencies of educational program	Scientific: ability to design and conduct scientific research, analyse and interpret data, conduct experiments and theoretical studies in the field of logistics services. Pedagogical: ability to organise the learning process, analyse the achievements of students using communication skills, knowledge of advanced teaching methods and technologies. Systemic and organisational: ability to define strategic objectives and develop management decisions in the field of sustainable logistics. Innovative and digital: readiness to implement modern information technologies to ensure sustainable operation of the supply chain. Flexible and adaptive: ability to work in different conditions of interaction with external and internal environment, application of knowledge of international standards in the field of environment, sustainable development and logistics.
12	Learning outcomes of educational program	1. Applies knowledge of foreign language, principles of academic writing and intellectual property rights in

		conducting and describing the results of scientific research in the professional field. 2.Uses methodology, quantitative and qualitative research methods and tools to write scientific articles and doctoral dissertation, evaluate and analyse research results. 3. Is able to effectively plan, organise and manage logistics processes in urban environments and emergencies based on digital technology and sustainable development principles. 4. Ensures mutually beneficial co-operation of all stakeholders in shaping the value chain in order to achieve supply chain sustainability. 5. Develops strategy, strategic objectives and relevant indicators for effective management of logistics processes and supply chain based on modern decision-making methods and principles of strategic management 6. Is able to design and predict flexible operating environments based on a systematic approach. 7. Develops and designs sustainable logistics networks based on evaluation and decision-making methodology.
13	Education form	Full-time
14	Period of training	3
15	Amount of credits	180
16	Languages of instruction	Russian, kazakh, english
17	Academic degree awarded	Doctorate
18	Developer(s) and authors	Mukhanova Gulmira Samudinovna Imasheva Gulnar Mahmutovna Tymbayeva Zhazira Muratbekovna Chakeyeva Karylgash Caulaubayevna

4.2. Relationship between the achievability of the formed learning outcomes based on educational program and academic disciplines

№	Discipline name	Short description of discipline	Amount of credits	Generated learning outcomes (codes)						
				LO 1	LO 2	LO 3	LO 4	LO 5	LO 6	LO 7
Cycle of basic disciplines University component										
1	Academic writing	Objective: to develop academic writing skills and writing strategies for doctoral students in engineering and natural sciences. Content: fundamentals and general principles of academic writing, including: writing effective sentences and paragraphs, writing an abstract, introduction, conclusion, discussion, and references; in-text citation; preventing plagiarism; and preparing a conference presentation.	5	**v**	**v**				**v**	**v**
2	Methods of scientific research	Purpose: It consists in mastering knowledge about the laws, principles, concepts, terminology, content, specific features of the organization and management of scientific research using modern methods of scientometry. Contents: structure of technical sciences, application of general scientific, philosophical and special methods of scientific research, principles of organization of scientific research, methodological features of modern science, ways of development of science and scientific research, the role of technical	5	**v**						

		sciences, computer science and engineering research in theory and practice.								
Cycle of basic disciplines Component of choice										
3	Humanitarian logistics	The purpose of the discipline – to prepare PhD students for effective management of logistical processes related to humanitarian aid in emergency situations, natural disasters, conflicts and other crises. Content: Humanitarian needs assessment. Planning and Coordination: Developing logistics plans that include routes, timing and required resources. Organizing the delivery of aid from points of departure. Monitoring and evaluation: Continuous monitoring of logistics processes and evaluation of the effectiveness of assistance provided. Ethical and legal aspects.	5			**v**				
4	City logistics	The purpose of the discipline – PhD students develop a systematic approach to managing logistics processes in an urban environment, which includes efficient distribution and movement of goods, traffic flow management and optimization of urban infrastructure in order to improve the quality of life of the population. Content: Urban logistics in the development of sustainable cities. Components of urban logistics. - Interaction of sectors: social, economic infrastructure. Transport systems in cities. Management of cargo transportation in cities. Sustainable development of urban logistics systems. Smart city technologies and their impact on	5			**v**				**v**

		logistics. Innovative projects in the field of urban logistics.								
Cycle of profile disciplines Component of choice										
5	Green and sustainable logistics	The purpose of the discipline – to prepare PhD students to solve problems related to reducing the environmental impact of logistics operations, optimizing the use of resources and introducing innovative technologies to create efficient and environmentally friendly transport and storage systems. Content: The principles of sustainable development in logistics. Sustainable supply chains. Green technologies and innovations in logistics. Environmental certification and standards. Waste management and recycling.	5			**v**	**v**			**v**
6	Logistic network design in supply chain	The purpose of the discipline – to develop PhD students' decision-making skills in network design in the supply chain. Content: The role of network design in the supply chain. Factors influencing network design decisions. Methodologies for network design decision making in supply chain. Models of supply chain facility location. Capacity allocation models. Global supply chain network design. Evaluating and making global supply chain network design decisions under uncertainty.	5							**v**
7	Management of Logistics process efficiency	The purpose of the discipline – to develop doctoral students' managerial skills to improve the efficiency and sustainability of the logistics system based on the	5				**v**	**v**	**v**	

		application of methods of analysing logistics processes. Content: Flexible supply chain operating environments. Time compression in the supply chain. Strategic thinking about collaboration in supply chain management. Performance measurement and management in supply chain. Global corporate logistics. Benchmarking in logistics and supply chain management. Digital transformation and logistics performance. Efficiency of logistics operations in the company's foreign economic activities. Impact of intelligent logistics on logistics efficiency improvement								
8	Supply chain management strategies	The purpose of the discipline –to form doctoral students' ability to develop supply chain management strategies based on modern methods in management decision-making aimed at systemic improvement of the company's logistics processes. Content: Modern trends in supply chain development and management. Conceptual approach to logistics strategy development. Creating a vision for the future. Supply chain and logistics management processes. Setting chain-wide objectives through service level agreements. Defining specific metrics for the entire chain. Controlling financial costs in the supply chain. Supply diversification strategies, back-up supplies and flexibility in operational processes.	5		v			v	v	
9	Intellectual property and the global market	Purpose: the goal is to train specialists in the field of intellectual property law who can	5	v					v	

		analyze and predict trends in its development in the global market, develop strategies for the protection and commercialization of intellectual property. Contents: global aspects of intellectual property and its role in international trade and economics, analysis of international agreements and conventions, IP management strategies, cases of protection and violation of intellectual property rights in various jurisdictions.								

5. Curriculum of educational program

NON-PROFIT JOINT STOCK COMPANY
"KAZAKH NATIONAL RESEARCH TECHNICAL UNIVERSITY NAMED AFTER K.I. SATBAYEV"

SATBAYEV UNIVERSITY

«APPROVED»
Decision of the Academic Council
NPJSC«KazNRTU
named after K.Satbayev»
dated 20.02.2025 Minutes № 9

WORKING CURRICULUM

Academic year	2025-2026 (Autumn, Spring)
Group of educational programs	D148 - "D148 Logistics (by industry)"
Educational program	8D11303 - "Sustainable logistics"
The awarded academic degree	Doctor of Philosophy PhD
Form and duration of study	full time (scientific and pedagogical track) - 3 years

Discipline code	Name of disciplines	Block	Cycle	Total ECTS credits	Total hours	lek/lab/pr Contact hours	in hours SIS (including TSIS)	Form of control	Allocation of face-to-face training based on courses and semesters						Prerequisites
									1 course		2 course		3 course		
									1 sem	2 sem	3 sem	4 sem	5 sem	6 sem	
CYCLE OF GENERAL EDUCATION DISCIPLINES (GED)															
CYCLE OF BASIC DISCIPLINES (BD)															
M-1. Module of basic training (university component)															
MET322	Methods of scientific research		BD, UC	5	150	30/0/15	105	E	5						
LNG305	Academic writing		BD, UC	5	150	0/0/45	105	E	5						
LOG327	Humanitarian logistics	1	BD, CCH	5	150	30/0/15	105	E	5						
LOG328	City logistics	1	BD, CCH	5	150	30/0/15	105	E	5						
MNG349	Intellectual property and the global market	1	BD, CCH	5	150	30/0/15	105	E	5						
M-3. Practice-oriented module															
AAP350	Pedagogical practice		BD, UC	10				R		10					
CYCLE OF PROFILE DISCIPLINES (PD)															
M-2. Module of professional activity (component of choice)															
LOG329	Green and sustainable logistics	1	PD, CCH	5	150	30/0/15	105	E	5						
LOG330	Logistic network design in supply chain	1	PD, CCH	5	150	30/0/15	105	E	5						
LOG331	Management of Logistics process efficiency	2	PD, CCH	5	150	30/0/15	105	E	5						
LOG332	Supply chain management strategies	2	PD, CCH	5	150	30/0/15	105	E	5						
M-3. Practice-oriented module															
AAP355	Research practice		PD, UC	10				R			10				
M-4. Experimental research module															
AAP336	Research work of the doctoral student, including internships and doctoral dissertation		RWDS	5				R	5						
AAP347	Research work of the doctoral student, including internships and doctoral dissertation		RWDS	20				R		20					
AAP347	Research work of the doctoral student, including internships and doctoral dissertation		RWDS	20				R			20				
AAP356	Research work of the doctoral student, including internships and doctoral dissertation		RWDS	30				R				30			
AAP356	Research work of the doctoral student, including internships and doctoral dissertation		RWDS	30				R					30		
AAP348	Research work of the doctoral student, including internships and doctoral dissertation		RWDS	18				R						18	
M-5. Module of final attestation															
ECA325	Final examination (writing and defending a doctoral dissertation)		FA	12										12	
Total based on UNIVERSITY:									30	30	30	30	30	30	

	60	60	60	

Number of credits for the entire period of study

Cycle code	Cycles of disciplines	Credits			
		Required component (RC)	University component (UC)	Component of choice (CCH)	Total
GED	Cycle of general education disciplines	0	0	0	0
BD	Cycle of basic disciplines	0	20	5	25
PD	Cycle of profile disciplines	0	10	10	20
Total for theoretical training:		**0**	**30**	**15**	**45**
RWDS	Research Work of Doctoral Student				123
ERWDS	Experimental Research Work of Doctoral Student				0
FA	Final attestation				12
TOTAL:					**180**

Decision of the Educational and Methodological Council of KazNRTU named after K.Satpayev. Minutes № 4 dated 03.02.2025

Decision of the Academic Council of the Institute. Minutes № 3a dated 20.12.2024

Signed:

Governing Board member - Vice-Rector for Academic Affairs	Uskenbayeva R. K.
Approved:	
Vice Provost on academic development	Kalpeyeva Z. K.
Head of Department - Department of Educational Program Management and Academic-Methodological Work	Zhumagaliyeva A. S.
Supervisor - School of Transport Engineering and Logistics	Abdullayev S. C.
Department Chair - Logistics	Bektilevov A. Ю.
Representative of the Academic Committee from Employers ___Acknowledged___	Sharubekov M.