### MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE KHARKIV NATIONAL AUTOMOBILE AND HIGHWAY UNIVERSITY

## DRAFT VERSION OF THE EDUCATIONAL PROFESSIONAL PROGRAMME

## **Transport Systems and Logistics**

second (master's) level of higher education name of the educational level

in the specialisation

275.03 "Transport technology (in road transport)" code and name of the speciality

in the speciality

<u>275 "Transport technology (by modes)"</u> code and name of the speciality

field of knowledge

<u>27 "Transport"</u> code and name of the area of knowledge

Qualification <u>Master of Science in Transport Technology (in road transport)</u> <u>qualification title</u>

"

APPROVED BY			
BY THE ACADEMIC	COU	NCIL	OF KhNAHU
minutes No fro	om "	''	2024
Head of the Academic	Coun	cil	
	Vikto	r BOH	OMOLOV
signature	first na	ame and	surname
The educational progra	amme	enters	into force from
order No from "			2024
order No from "			2024
order No from " Rector	" Vikto	 or BOH	2024 OMOLOV

#### **INTRODUCTION**

1. Developed by the project team:

Peter HORBACHOV, D.Sc. in Engineering, Professor, Head of the Department of Transport Systems and Logistics, \_\_\_\_\_\_ guarantor of the EPP.

Yevhen LIUBYI, PhD in Engineering, Associate Professor of the Department of Transport Systems and Logistics \_\_\_\_\_.

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Volodymyr SHEVCHENKO, Head of the Traffic Management Division the Road Management Office of the Department of Construction and Road Management of Kharkiv City Council \_\_\_\_\_\_.

Yuliia KARIAHINA, student of the group TC-51-23 \_\_\_\_\_\_.

1. Considered and approved at the meeting of Transport Systems and Logistics Department

Minutes No. \_\_\_\_ from "\_\_\_\_" \_\_\_\_ 2024.

2. Recommended by the Methodological Commission of the TSF Minutes No. \_\_\_\_\_ from "\_\_\_\_" 2024.

3. Approved by the Methodological Council of KhNAHU Minutes No. \_\_\_\_\_ from "\_\_\_\_\_" 2024.

4. Reviews and feedback from external stakeholders:

1 – General information							
Full name of the	Kharkiv National Automobile and Highway University						
higher education	Transport System Faculty						
institution and	Transport Systems and Logistics Department						
structural unit							
Degree of higher	Master (MSc)						
education and	Master of Science (MSc) in Transport Technology (in road						
qualification title	transport)						
(original script)							
Legal name of the	Transport Systems and Logistics						
educational							
professional							
programme							
Type of diploma	Master's diploma, a one-year and four months full-time						
and scope of the	program, 90 ECTS						
educational							
programme							
Accreditation	Accreditation certificate of the EPP "Transport Systems and						
certificate	Logistics" in specialty 275 Transport Technologies is valid						
	until July 01, 2029 in accordance with the decision of the						
	NAQA of December 12, 2023, minute No. 20 (49) (date of						
	issue: 12/14/2023).						
Cycle/level	NQL Ukraine – Level 7, FQ-EHEA – Second Cycle,						
	EQF-LLL – Level 7						
Prerequisites	Bachelor's or Specialist's degree						
Language(s) of	State						
instruction							
Educational	Two years						
programme							
duration							
The link for the	https://www.khadi.kharkov.ua/education/katalog-osvitnikh-						
website with a	program/27503-transportni-tekhnologiji-na-						
description of the	avtomobilnomu-transporti/						
educational							
programme							
2	2 – Aim of the educational programme						

## **1. THE EDUCATIONAL PROGRAMME PROFILE**

To provide education in the area of study 27 "Transport" with extensive employability. To provide theoretical and practical training of high-qualified specialists who would acquire essential professional competencies to perform skilled tasks and practical activities in the field of study 27 "Transport" under the educational and professional programme "Transport Systems and Logistics", the ability to perform research

# **3** – Description of the educational programme

Subject area	Area of study – 27 "Transport"									
(area of study.	Speciality – 275 "Transport Technology (by type)".									
speciality.	specialisation $-275.03$ Transport Technology (in road									
specialization (if	transport)									
specialisation (II	<b>Objects of study</b> used transmert systems and technology									
any))	Objects of study – road transport systems and technology,									
	urban and regional transport systems, warehousing and									
	inventory management systems, and logistics systems for									
	promoting material flow in the supply chain.									
	Learning objectives – training specialists who can solve									
	complex problems and problems of the transport industry in									
	their professional (scientific) activities in road transport									
	systems and technology and in the educational process.									
	which involves research and innovation and is characterised									
	by the uncertainty of conditions and requirements.									
	Theoretical content of the subject area sections of									
	incorrental content of the subject area – sections of									
	science and technology that study and combine the									
	relationships and patterns in the theory of transport systems									
	and technology functioning.									
	Methods, techniques and technology – analytical,									
	numerical and experimental methods of studying transport									
	systems functioning, methods of long-term, short-term and									
	operational management of transport systems, and transport									
	technology.									
	<b>Fools and equipment</b> – computers and software,									
	multimedia: modern devices for traffic control and transport									
	systems management: full-scale samples and models of									
	transport facilities									
Forma of the	Educational and professional									
	Educational and professional.									
educational	The structure of the programme implies mastering the									
programme	conceptual foundations of research, development, design,									
	organisation, and transport systems management, solving									
	urgent tasks and problems in the field of road transport,									
	particularly concerning improving the efficiency of									
	transport and logistics systems.									
Main focus of the	The programme focuses on mastering fundamental and									
study programme	applied knowledge in the transport and logistics systems in									
and specialisation	road transport.									
· · · · · · · · · · · · · · · · · · ·	It is acquiring in-depth theoretical and practical knowledge									
	skills abilities and relevant competencies that allow one to									
	be competitive in the amployment market of transport									
	technologies in read transport planning and modelling of									
	technologies in road transport, planning and modelling of									
	transport systems of different detailed levels, improving the									
	efficiency of cargo supply chains.									

	Use of modern theories and practices to improve the
	efficiency of transport and logistics systems in road
	transport, as well as advanced transport planning and
	modelling methods and technology.
	Development and optimisation of passenger and freight
	transport systems, as well as improving the efficiency of
	supply chains, inventory management systems and logistics
	systems in general.
	<b>Keywords:</b> road transport. logistics systems, transport
	planning and modelling, transport systems, transport
	technology, supply chain management.
Programme	Student-centred organisation of the educational process of
specifics	higher education applicants (masters) involves a
promos	combination of professional training with innovative and
	research activities
	It provides for mastering modern software products VISUM
	and VISSIM for forming transport models (supply and
	demand) with different detail levels by higher education
	applicants (masters).
	The content and structure of the educational and
	professional programme are periodically updated, which
	makes it possible to meet modern trends in the development
	of transport technology in road transport.
<b>4</b> - Emp	lovability of graduates and further education
Employability of	Based on the current version of the classifier of professions
graduates	(DK 003: 2010), as well as taking into account the
8	International Standard Classification of Occupations 2019
	(ISCO-19), applicants who have graduated under the EPP
	"Transport Systems and Logistics" have the opportunity to
	hold the following list of positions in the fields of
	"Transport, warehousing, postal and courier activities".
	"Professional, scientific and technical activities".
	"Education":
	- engineer in management and organization of
	transportation (II category):
	- logistician:
	- transport engineer at transport enterprises, in the transport
	and communications department of the region, district and
	city administration, in research laboratories of design
	institutions, in freight forwarding enterprises;
	- engineer in the departments of training and retraining:
	- lecturer in higher education institutions, assistant in higher
	education institutions;
	- junior researcher in transport research institutions, design
	organizations and enterprises whose activities are related to

	transportation in different directions.
Academic rights of	It is possible to continue studying at the third (educational
graduates	and scientific) level of higher education (PhD).
	5 - Teaching and assessing
Teaching and	Student-centred learning, self-study, a combination of
learning	lectures, laboratory and practical classes with case studies
	and case methods that develop communication and
	leadership skills and teamwork, projects, research
	laboratory/practical work, and preparation of a qualification
	paper.
Assessment	The control of students' knowledge and skills is carried out
	as current and final control. Current control includes the
	control of students' knowledge, skills and abilities in
	lectures, practical classes and during individual learning
	tasks, tests, control papers, computational, computational
	and graphical coursework. Final control is carried out
	through exams, tests and public defence of qualification
	work.
	6 - Programme competences
Integral	The ability of a person to solve complex problems and
competence	problems of the transport industry in the field of
	professional (scientific) activity of road transport systems
	and technology and in the learning process, which involves
	research and innovation and is characterised by the
	uncertainty of conditions and requirements.
General	GC 01. Ability to work in an international context.
competencies	GC 02. Ability to motivate people and move towards a
	common goal.
	GC 03. Ability to search, process and analyse information
	from various sources.
	GC 04. Ability to communicate with representatives of
	other professional groups of different levels (experts from
	other fields of knowledge and economic activities)
	GC 05. Ability to develop and manage projects.
	GC 06. Ability to evaluate and ensure the quality of work
	performed.
	GC 07. Ability to conduct research at an appropriate level.
	GC 08. Ability to generate new ideas (creativity).
Special	SC 01. Ability to research and manage the functioning of
(professional)	transport systems and technologies.
competencies	SC 02. Ability to identify and apply promising directions
	for transport process modelling.
	SC 03. Ability to use modern technologies of freight
	forwarding.

	SC 04. Ability to manage supply chains and logistics
	Controls.
	SC 05. Ability to manage irregint transportation by type of
	transport.
	SC 06. Ability to manage passenger transportation by
	modes of transport.
	SC 07. Ability to manage traffic flows.
	SC 08. Ability to manage the reliability and efficiency of
	transport systems and technologies.
	SC 09. Ability to conduct an examination of traffic
	accidents by type of transport.
	SC 10. Ability to consider the impact of customs
	procedures in the development of transport technology.
	SC 11. Ability to use specialised software to solve complex
	problems in the field of transport systems and technologies.
	SC 12. Ability to model transport systems of passenger
	and freight transport at the local and regional level,
	assess the quality and reliability of their work,
	environmental parameters, and traffic safety indicators
	and improve the efficiency of such systems.
	SC 13. Ability to model the operation of inventory
	management systems at various links in supply chains.
	SC 14. Ability to use the methods and approaches
	necessary to create cargo delivery systems and assess the
	logistics service level.
	$\overrightarrow{SC}$ 15. Ability to undertake preventive and operational
	planning, management of civil protection measures and
	safety of professional activities in the development of
	transport products
I	7 – Training results

TR 01. Search for the necessary information in scientific and technical literature, databases, and other sources and analyse and objectively evaluate information in the field of transport systems and technologies and related interdisciplinary problems.

TR 02. To freely discuss issues of professional activity, projects and research in the field of transport systems and technologies orally and in writing in state and foreign languages.

TR 03. Make effective transport systems and technologies decisions, considering technical, social, economic and legal aspects, generate and compare alternatives, assess the necessary resources and limitations, and analyse risks.

TR 04 To convey knowledge, decisions and the basis of their adoption to specialists and non-specialists in an unambiguous form.

TR 05. To ensure the safety of people and the environment during professional activities and implementation of projects in the field of transport systems and technologies.

TR 06. Develop new and improve existing transport systems and technologies, determine development goals, existing limitations, performance criteria and areas of use.

TR 07. Develop and analyse graphic, mathematical and computer models of transport systems and technologies.

TR 08. Develop cargo and passenger transportation technologies by mode of transport based on research and relevant data.

TR 09. Study the impact of customs procedures on the efficiency of transport technologies.

TR 10. Develop and apply modern technologies of transport and forwarding services.

TR 11. Analyse and evaluate the efficiency of supply chains and logistics centres, and calculate relevant indicators.

TR 12. Manage complex technological and production processes in transport systems and technologies, including unpredictable ones requiring new strategic approaches.

TR 13. Organise work of the personnel, and ensure their professional development and objective evaluation.

TR 14. Use special software to analyse, develop and improve transport systems and technologies.

TR 15. Develop effective inventory management strategies at various links of supply chains.

TR 16. Develop cargo delivery systems, and evaluate and analyse the transport and logistics service level.

TR 17. Evaluate and analyse the level of logistics service for consumers of transport services.

TR 18. Develop and justify optimal solutions for the creation of road transport products, taking into account the requirements of civil protection, professional safety, cost and time

8 - Reso	urce support for programme implementation								
Academic staffing	The programme involves full-time academic staff with								
	academic degrees and/or titles and highly qualified								
	experienced specialists (part-time).								
	In order to increase the professional level of training in the								
	disciplines taught, all academic staff improve their								
	qualifications at least once every five years, and during this								
	period, they must obtain at least 6 ECTS.								
Material and	The implementation of the educational and professional								
technical support	programme requires that the material and technical support								
	of the university meets the requirements of the Licensing								
	Conditions (Resolution of the Cabinet of Ministers of								
	Ukraine No. 1187 dated 30.12.2015, current version dated								
	20.06.2021, basis - 365-2021-p "On Approval of the								
	Licensing Conditions for Conducting Educational Activities								
	of Educational Institutions"). The buildings have								

	classrooms for lectures, seminars, course design, group and
	individual consultations, independent work, and rooms for
	storage and preventive maintenance of educational
	equipment. Rooms for independent work are equipped with
	computers that have Internet access All the necessary
	social infrastructure is available and the number of places
	in the dormitories meets the requirements.
IT and teaching	The official and educational websites of the university
and learning	(www.khadi.kharkov.ua, https://dl2022.khadi.kharkov.ua/)
materials	contain information about educational programmes,
	educational, teaching and educational activities, structural
	units, admission rules, main news of the university and its
	subdivisions, contacts. All users registered at KhNAHU
	have unlimited access to the Internet via Wi-Fi.
	Implementing the educational and professional programme
	provides for the availability of licensed specialised software
	by professionally oriented disciplines, textbooks, lecture
	notes, methodological instructions for practical (seminar)
	classes, laboratory work, and independent work of students.
	The quality implementation of the educational components
	of the educational and professional programme is facilitated
	by the availability of free access to Scopus and Web of
	Science electronic scientific databases, as well as the
	effective work of the KhNAHU Scientific Library
	( <u>http://library.khadi.kharkov.ua/golovna/</u> ), which also
	provides an opportunity to work with electronic catalogues
	of periodicals in the speciality. One can work with the
	databases from any computer connected to the university
	local network.
	9 – Academic mobility
National credit	Implementing the educational and professional programme
mobility	involves the conclusion of cooperation agreements between
	KNNAHU and higher education institutions of Ukraine,
	participating students and teachers in national conferences
Internetional analit	and seminars.
International credit	Implementing the educational and professional programme
modility	anows students to participate in international conferences
	and research internships for students under the Erasmus+
Taaahira	programme.
internetional	international students are taught on general terms with
atudonta	auditional language training.
students	

# 2. LIST OF COMPONENTS OF THE EDUCATIONAL PROGRAMME AND THEIR LOGICAL ORDER

	2.1 List of EPP components							
Code	Components of the educational programme (academic disciplines, coursework, CGW,	Number	Form of final					
EC	internships, qualification work)	of credits	control					
	1. Compulsory components of th	e EPP						
1.1 Cycle of general training disciplines								
CC 1	Methods of Scientific Research	4	exam					
		т	CW					
CC 2	Project Analysis	4	exam					
CC 3	Civil Defence	3	credit test					
	Foreign Language	1	credit					
CC 4		4	test/credit test					
	<b>1.2. Cycle of professional training c</b>	lisciplines						
CC 5	Integrated Transport Systems	5	exam					
		5	CW					
CC 6	Supply Chain Management	4	exam					
CC 7	Deterministic Analysis of Road Accidents	4	exam					
CC 8	Traffic Flows Modelling	4	exam					
CC 9	Freight Forwarding Activities	4	exam					
			credit test					
CC 10	Pre-diploma Practice	10	(defence of the					
			practice report)					
CC 11	Performance of Qualifying Paper (Master	20	final					
	Thesis)	20	assessment					
Total an	nount of compulsory components:		66					
	2. Elective components (student's	choice)						
	2.1 Cycle of general training disc	ciplines						
EC1	Optional component GT 1	4	credit test					
EC2	Optional component GT 2	4	credit test					
	2.2. Cycle of professional training of	lisciplines						
EC3	Optional component PT 1	4	credit test					
EC4	Optional component PT 2	4	credit test					
EC5	Optional component PT 3	4	credit test					
EC6	Optional component PT 4	4	credit test					
Total an	nount of elective components:		24					
TOTAL	AMOUNT OF EDUCATIONAL		90					
PROGR	AMME		<b>J</b> U					

2.2 The all-University catalogue of elective components is available on the official website of the University by the link <a href="https://www.khadi.kharkov.ua/education/katalog-vibirkovikh-disciplin/magistr/">https://www.khadi.kharkov.ua/education/katalog-vibirkovikh-disciplin/magistr/</a>



#### **3 STRUCTURAL AND LOGICAL DIAGRAM OF THE EPP**

## 4. FORM OF ASSESSMENT OF HIGHER EDUCATION STUDENTS

Forms of assessment	The assessment of applicants is carried out in the form of						
of higher education	a public defence of the qualification work						
students							
Requirements for qualification work	The qualification paper (master thesis) should provide for the solution of a complex task or problem in the field of transport technology, which involves research and/or innovation and is characterised by uncertainty of conditions and requirements. The qualification paper (master thesis) must not contain academic plagiarism, fabrication, or forgery. The qualification paper (master thesis) of the applicant is published in the repository of KhNAHU. The qualification paper (master thesis) is defended publicly (in public) at a meeting of the Examination Commission for Awarding the Qualification to Graduates.						

### 5. MATRIX OF CORRESPONDENCE OF PROGRAMME COMPETENCES TO THE EPP COMPONENTS

	CC 1	CC 2	CC3	CC 4	CC 5	CC 6	CC 7	CC 8	CC 9	CC 10	CC 11
IC	+	+	+	+	+	+	+	+	+	+	+
GC 01		+		+				+	+	+	+
GC 02		+				+			+	+	+
GC 03	+			+			+	+		+	+
GC 04	+	+		+			+	+		+	+
GC 05		+							+	+	+
GC 06		+				+			+	+	+
GC 07	+		+				+			+	+
GC 08	+	+			+	+		+		+	+
SC 01	+	+	+		+	+	+	+		+	+
SC 02	+	+					+	+		+	+
SC 03					+	+			+	+	+
SC 04					+	+			+	+	+
SC 05		+			+				+		+
SC 06		+			+						+
SC 07								+			+
SC 08		+						+	+		+
SC 09							+			+	+
SC 10						+			+		+
SC 11	+	+			+		+	+		+	+
SC 12	+							+		+	+
SC 13	+					+				+	+
SC 14	+				+	+			+	+	+
SC 15		+	+				+			+	+

	CC 1	CC 2	CC 3	CC 4	CC 5	CC 6	CC 7	CC 8	CC 9	CC 10	CC 11
TR 01	+			+			+	+		+	+
TR 02				+							+
TR 03	+	+				+		+		+	+
TR 04		+		+							+
TR 05			+				+			+	+
TR 06	+				+	+				+	+
TR 07	+						+	+		+	+
TR 08					+				+		+
TR 09									+		+
TR 10									+	+	+
TR 11		+				+				+	+
TR 12		+						+			+
TR 13		+							+	+	+
TR 14	+						+	+		+	+
TR 15						+				+	+
TR 16					+	+			+	+	+
TR 17					+	+				+	+
TR 18			+							+	+

#### 6. MATRIX OF ENSURING PROGRAMME LEARNING OUTCOMES BY EDUCATIONAL PROGRAMME COMPONENTS

### 7. MATRIX OF CORRESPONDENCE BETWEEN PROGRAMME LEARNING OUTCOMES AND COMPETENCES

Training	Competencies   Integral competence																						
results																							
	General competencies								Special (professional) competencies														
	GC 01	GC 02	GC 03	GC 04	GC 05	GC 06	GC 07	GC 08	SC 01	SC 02	SC 03	SC 04	SC 05	SC 06	SC 07	SC 08	SC 09	SC 10	SC 11	SC 12	SC 13	SC 14	SC 15
TR01	+		+	+																			
TR02	+																						
TR03								+															
TR04	+			+																			
TR05							+		+								+						+
TR06								+	+	+										+	+	+	
TR07									+	+										+			
TR08													+	+					+				
TR09													+	+				+	+				
TR10											+								+				
TR11						+			+	+		+									+		
TR12		+			+	+						+	+	+	+	+			+				
TR13		+			+	+																	
TR14																			+	+			
TR15												+									+		
TR16											+										+	+	
TR17											+	+									+	+	
TR18																							+

# 8. REQUIREMENTS FOR THE INTERNAL QUALITY ASSURANCE OF HIGHER EDUCATION

According to the Law of Ukraine "On Higher Education", the system of quality assurance of educational activities and quality of higher education (internal quality assurance system) at Kharkiv National Automobile and Highway University provides for the following procedures and activities

- defining the principles and procedures for ensuring the quality of higher education;

- monitoring and periodic review of educational programmes;

– annual assessment of higher education students, research and teaching staff of the higher education institution and regular publication of the results of such assessments on the official website of the higher education institution, information stands and other ways;

- providing advanced training for pedagogical, scientific and research staff;

- ensuring the availability of necessary resources for the organisation of the educational process, including independent work of higher education students;

- ensuring the availability of information systems for effective management of the educational process;

- ensuring publicity of information about educational programmes, degrees of higher education and qualifications;

 ensuring the adherence to academic integrity by employees of higher education institutions and higher education students, including the creation and maintenance of an effective system for the prevention and detection of academic plagiarism;

- other procedures and measures.