

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

THE EDUCATIONAL PROFESSIONAL PROGRAMME

«TRANSPORT SYSTEMS AND LOGISTICS»

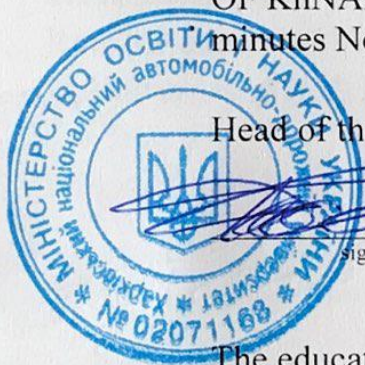
second (master's) level of higher education
in the specialization 275.03 "Transport technology (in road transport)"
in the speciality 275 "Transport technology (by modes)"
field of knowledge 27 "Transport"
qualification Master of Science in Transport Technology (in road transport)

APPROVED

BY THE ACADEMIC COUNCIL
OF KhNAHU

minutes No. 67/24 from «04» July 2024

Head of the Academic Council



signature

Viktor Bohomolov
first name and surname

The educational programme enters into force
from 01.09.2024

order No. 87 from «05» July 2024

Rector



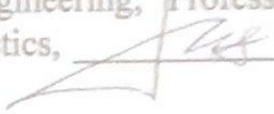
signature

Viktor Bohomolov
first name and surname

Kharkiv 2024

INTRODUCTION

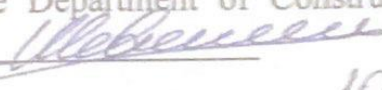
1. Developed by the project team:

Petro 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 .

Stanislav SVICHYNSKYI, PhD in Engineering, Associate Professor of the Department of Transport Systems and Logistics .

Anastasia KOCHINA, PhD, Associate Professor, Department of Transport Systems and Logistics .

Volodymyr SHEVCHENKO, Head of the Traffic Management Division of 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 the Department of Transport Systems and Logistics
Minutes No. 5 from 21.05.2024.

2. Recommended by the Methodological Commission of the Faculty of Transport Systems
Minutes No. 10 from 21.06.2024.

3. Approved by the Methodological Council of KhNAHU
Minutes No. 9 from 02.07.2024.

4. Reviews and feedback from external stakeholders:

Dmytro MUZYLOV, PhD, Associate Professor of the Department of Transport Technologies and Logistics, State Biotechnology University, Kharkiv

Valerii Mospan, Head of the Department of Transport and Mobility, Project Manager, expert in transport planning and modeling, representative office of Dornier Consulting International GmbH, PhD, Kyiv

Ihor Mohyla, expert on transport and mobility at Egis-Ukraine LLC, PhD.

1. THE EDUCATIONAL PROGRAMME PROFILE

1 – General information	
Full name of the higher education institution and structural unit	Kharkiv National Automobile and Highway University Transport System Faculty Department of Transport Systems and Logistics
Degree of higher education and qualification title (original script)	Master (MSc) Master of Science (MSc) in Transport Technology (in road transport)
Legal name of the educational professional programme	Transport Systems and Logistics
Type of diploma and scope of the educational programme	Master's diploma, a one-year and four months full-time program, 90 ECTS
Accreditation certificate	Certificate of accreditation of the EPP "Transport Systems and Logistics", issued by NAQA on December 14, 2023, No. 6598. The certificate of accreditation of the EPP is valid until July 01, 2029.
Cycle/level	NQL Ukraine – Level 7, FQ-EHEA – Second Cycle, EQF-LLL – Level 7
Prerequisites	Bachelor's or Specialist's degree
Language(s) of instruction	English
Educational programme duration	Effective from September 01, 2024 until the end of the validity of the accreditation certificate or subsequent review and revision in accordance with changes in the regulatory framework of Ukraine in the field of higher education
The link for the website with a description of the educational programme	https://www.khadi.kharkov.ua/education/katalog-osvitnikh-program/27503-transportni-tekhnologiji-na-avtomobilnomu-transporti/
2 – Aim of the educational programme	
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, speciality, specialisation (if any))	<p>Area of study – 27 "Transport"</p> <p>Speciality – 275 "Transport Technology (by type)", specialisation – 275.03 Transport Technology (in road transport)</p> <p>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.</p> <p>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.</p> <p>Theoretical 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.</p> <p>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.</p> <p>Tools and equipment – computers and software, multimedia; modern devices for traffic control and transport systems management; full-scale samples and models of transport facilities.</p>
Focus of the educational programme	<p>Educational and professional.</p> <p>The structure of the programme implies mastering the 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.</p>
Main focus of the study programme and specialisation	<p>The programme focuses on mastering fundamental and applied knowledge in the transport and logistics systems in road transport.</p> <p>It is acquiring in-depth theoretical and practical knowledge, skills, abilities and relevant competencies that allow one to be competitive in the employment market of transport technologies in road transport, planning and modelling of transport systems of different detailed levels, improving the efficiency of cargo supply chains.</p>

	<p>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.</p> <p>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.</p> <p>Keywords: road transport, logistics systems, transport planning and modelling, transport systems, transport technology, supply chain management.</p>
Programme specifics	<p>Student-centred organisation of the educational process of higher education applicants (masters) involves a combination of professional training with innovative and research activities.</p> <p>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).</p> <p>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.</p>
4 - Employability of graduates and further education	
Employability of graduates	<p>The master is able to perform professional work, according to DK 003-2010: 1210.1 – directors of enterprises, institutions and organisations; 1223.1 – chief engineer; 1223.2 – head of the department; 1226.1 – chief dispatcher (transport, warehousing); 1226.1 – chief engineer (transport); 1226.1 – transport director; 1226.2 – head of the department (transport); 1226.2 – head of the urban transport route; 1226.2 – head of the reloading complex; 1226.2 – head of the service (transport); 1226.2 – head of the warehouse (cargo); 1227 – chief administrator (at commercial enterprises); 1238 – project and programme managers; 1316 – director (head) of a small enterprise (transport, warehouse); 1443 – manager (administrator) of freight forwarding activities; 1443 – manager (supervisor) of road transport; 2149.1 - Junior researcher (transport); 2149.2 - Transport engineer; 2359.1 - Other researchers in the field of education.</p>
Academic rights of graduates	<p>It is possible to continue studying at the third (educational and scientific) level of higher education (Doctor of Philosophy – PhD).</p>

5 - Teaching and assessing	
Teaching and learning	Student-centred learning, self-study, a combination of 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 competence	The ability of a person to solve complex problems and 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 competencies	GC 01. Ability to work in an international context. 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 (professional) competencies	SC 01. Ability to research and manage the functioning of transport systems and technologies. 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 centres. SC 05. Ability to manage freight transportation by type of transport.

	<p>SC 06. Ability to manage passenger transportation by modes of transport.</p> <p>SC 07. Ability to manage traffic flows.</p> <p>SC 08. Ability to manage the reliability and efficiency of transport systems and technologies.</p> <p>SC 09. Ability to conduct an examination of traffic accidents by type of transport.</p> <p>SC 10. Ability to consider the impact of customs procedures in the development of transport technology.</p> <p>SC 11. Ability to use specialised software to solve complex problems in the field of transport systems and technologies.</p> <p>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.</p> <p>SC 13. Ability to model the operation of inventory management systems at various links in supply chains.</p> <p>SC 14. Ability to use the methods and approaches necessary to create cargo delivery systems and assess the logistics service level.</p> <p>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</p>
7 – Training results	
<p>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.</p> <p>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.</p> <p>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.</p> <p>TR 04. To convey knowledge, decisions and the basis of their adoption to specialists and non-specialists in an unambiguous form.</p> <p>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.</p> <p>TR 06. Develop new and improve existing transport systems and technologies, determine development goals, existing limitations, performance criteria and areas of use.</p> <p>TR 07. Develop and analyse graphic, mathematical and computer models of</p>	

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 - Resource 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 technical support	The implementation of the educational and professional 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 and learning materials	<p>The official and educational websites of the university (www.khadi.kharkov.ua, https://dl2022.khadi.kharkov.ua/) 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.</p> <p>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 (http://library.khadi.kharkov.ua/golovna/), 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.</p>
9 – Academic mobility	
National credit mobility	Implementing the educational and professional programme involves the conclusion of cooperation agreements between KhNAHU and higher education institutions of Ukraine, participating students and teachers in national conferences and seminars.
International credit mobility	Implementing the educational and professional programme allows students to participate in international conferences and research internships for students under the Erasmus+ programme.

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

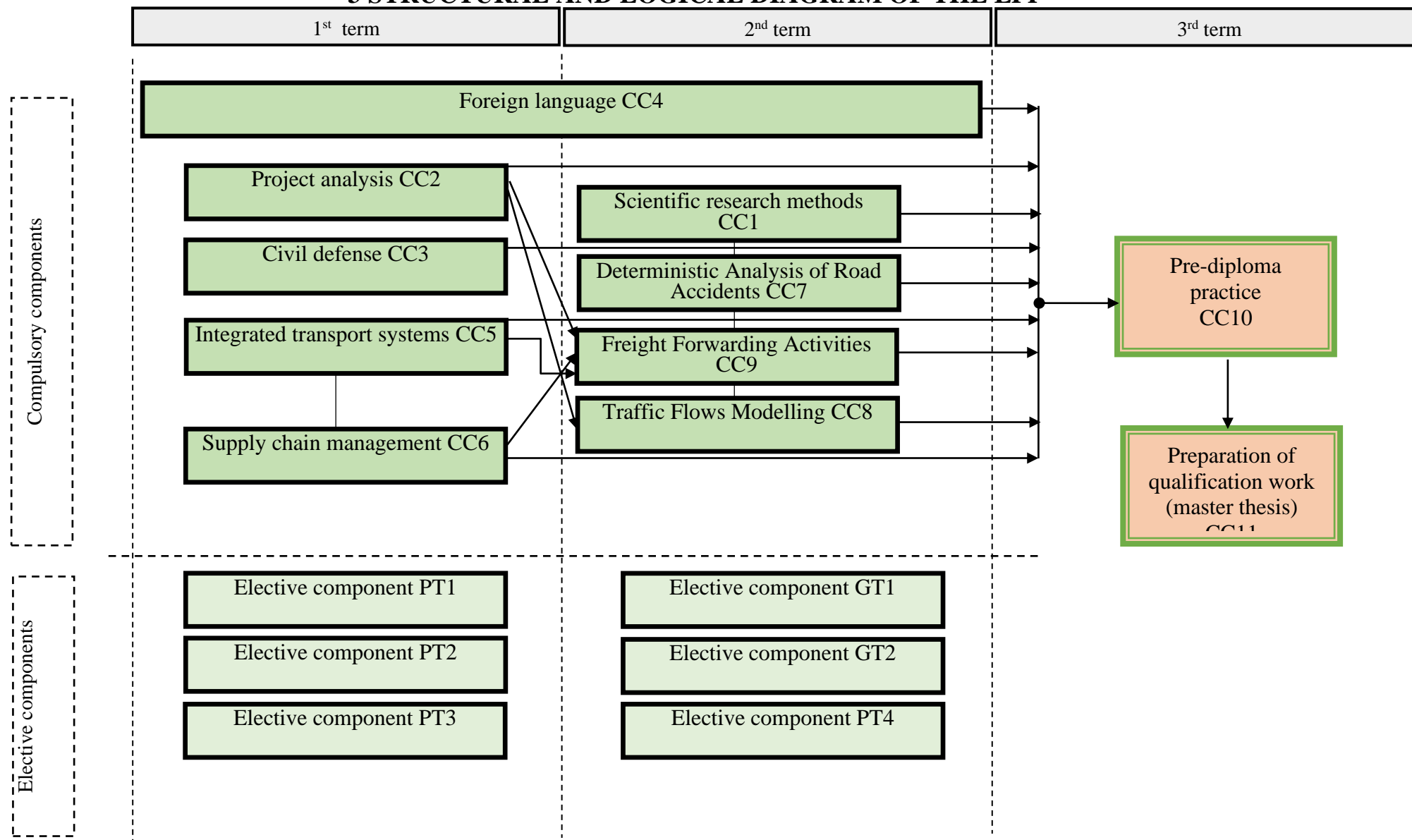
2.1 List of EPP components

Code EC	Components of the educational programme (academic disciplines, coursework, CGW, internships, qualification work)	Number of credits	Form of final control
1. Compulsory components of the EPP			
1.1 Cycle of general training disciplines			
CC 1	Methods of Scientific Research	4	exam CW
CC 2	Project Analysis	4	exam
CC 3	Civil Defence	3	credit test
CC 4	Foreign Language	4	credit test/credit test
1.2. Cycle of professional training disciplines			
CC 5	Integrated Transport Systems	5	exam 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
CC 10	Pre-diploma practice	10	credit test (defence of the practice report)
CC 11	Performance of Qualifying Paper (Master Thesis)	20	final assessment
Total amount of compulsory components:		66	
2. Elective components (student's choice)			
2.1 Cycle of general training disciplines			
EC1	Optional component GT1	4	credit test
EC2	Optional component GT2	4	credit test
2.2. Cycle of professional training disciplines			
EC3	Optional component PT1	4	credit test
EC4	Optional component PT2	4	credit test
EC5	Optional component PT3	4	credit test
EC6	Optional component PT4	4	credit test
Total amount of elective components:		24	
TOTAL AMOUNT OF EDUCATIONAL PROGRAMME		90	

2.2 The all-University catalogue of elective components is available on the official website of the University by the link

<https://www.khadi.kharkov.ua/education/katalog-vibirkovikh-disciplin/katalog-vibirkovikh-disciplin-dlja-np-2023/magistr/>

3 STRUCTURAL AND LOGICAL DIAGRAM OF THE EPP



4. FORM OF ASSESSMENT OF HIGHER EDUCATION STUDENTS

Forms of assessment of higher education students	The assessment of applicants is carried out in the form of a public defence of the qualification work
Requirements for qualification work	<p>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.</p> <p>The qualification paper (master thesis) must not contain academic plagiarism, fabrication, or forgery.</p> <p>The qualification paper (master thesis) of the applicant is published in the repository of KhNAHU.</p> <p>The qualification paper (master thesis) is defended publicly (in public) at a meeting of the Examination Commission for Awarding the Qualification to Graduates.</p>

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		+	+				+			+	+

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

	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			+							+	+

7. MATRIX OF CORRESPONDENCE BETWEEN PROGRAMME LEARNING OUTCOMES AND COMPETENCES

Training results	Competencies																						
	Integral competence																						
	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.