Profile of the educational program Transport Systems in specialty 275 Transportation technologies (by modes)

1 − General Information	
Full name of higher education institution	O.M. Beketov National University of Urban Economy in Kharkiv
Higher education degree and the name of the qualification in the original language	Магістр з транспортних технологій
Official name of the educational program	Transport systems
Type of diploma and volume of the educational program	Master's degree, unitary, 90 ECTS credits, term of training − 1 year 4 month
Availability of accreditation	-
Cycle / level	NQF of Ukraine – 8th level, FQ-EHEA – the second cycle, EQF-LLL – 7th l evel
Prerequisites	Availability of the first (bachelor's) degree or educational and qualification level of specialist
Language (s) of teaching	Ukrainian, English
Validity of the educational program	5 years
Internet address for the permanent description of the educational program	http://www.kname.edu.ua/
2 – The purpose of the educational program	
	The purpose of the educational program is to train specialists who can solve problems in the field of transport technologies by defining regularities of functioning of transport systems to ensure the efficiency of transportation processes by a rational organization of transport services based on mastering the system of professional competencies.
3 − Characteristics of the educational program	
Subject area	*The object of the study* is transport systems and technologies; *Objectives of the study* are training specialists capable of solving complex tasks and problems of the transport industry in the field of transport systems and technologies, or in the process of study that involves conducting research; *The theoretical content of the subject area* are sections of science and technique that study and combine connections and relationships in the theory of the functioning of transport systems and technologies;

	Methods, techniques, and technologies. Analytical, numerical and experimental methods of studying the functioning of transport systems, methods of long-term, short-term and operational management of transport systems, transport technologies; *Tools and equipment* are computer and software, multimedia; state-of-the-art devices for traffic control and operation of transport systems; specimens and models of transport objects.
Orientation of the educational program	Educational and scientific
The main focus of the educational program and specialization	Special education in the field 27 Transport in specialty 275 Transport technologies (by mode), educational program Transport systems. *Keywords:* transport; technology, system, transportation, cargo, passengers, loading and unloading, organization, traffic flow, traffic, warehouse, bus station, technology, transport service, efficiency of the transport process, vehicle, schedule, work schedule.
Features of the program	The program focuses on the integration of intelligent transportation and information technologies in the management of transport systems of cities.
4 – Eligibility of graduates to employment and further training	
Suitability for employment	Possible employment in public institutions and private companies for positions related to the organization of the transport process and research in the field of transport technologies. Professions (*according to the current version of the National Classifier of Ukraine: Classifier of Professions 2019*): 2149.1 - Junior Researcher (Transportation); 2149.1 - Researcher (Transport); 2149.1 - Research Assistant (Transport); 2149.2 - Dispatcher of Dispatcher Service Management; 2149.2 - Traffic Service Manager; 2149.2 - Transportation engineer; 2149.2 - Research Engineer; 2149.2 - Operator of a traffic service; 2310.2 - Teacher of a higher education institution.
Further training	Opportunity to study under the program of the third (educational-scientific) level of higher education.
5 – Teaching and assessment	
Teaching and learning	Student-centred training, self-study, pre-graduate training, master's thesis writing
Assessment	Oral and written exams, tests, practice, control tasks, courseworks and projects, master thesis, presentations and more.
6 – Program competencies	
Integrated Competence (IC)	Ability to solve complex tasks and problems in professional activity in the field of transport systems and technologies according to the specialization or the process of further education, applying the provisions, theories and methods of natural, technical, informational

	and socio-economic sciences, which provides for research and/or innovation and characterized by the complexity and uncertainty of the conditions.
General competencies (GC), defined by the standard of higher education of the specialty	GC 01. Ability to work in an international context. GC 02. Ability to motivate people and move toward a common goal. GC 03. Ability to search, process and analyze information from different sources. GC 04. Ability to communicate with representatives of other professional groups of different levels (with experts in other fields of knowledge/types of economic activity). GC 05. Ability to develop and manage projects. GC 06. Ability to evaluate and ensure the quality of work performed. GC 07. Ability to identify, set and solve problems. GC 08. The ability to generate new ideas (creativity).
Professional competence of the specialty (PC) defined by the standard of higher education of the specialty	PC 01. Ability to research and manage the functioning of transport systems and technologies. PC 02. Ability to identify and apply promising directions for modelling of transport processes. PC 03. Ability to use modern technologies of freight forwarding activities. PC 04. Ability to manage supply chains and logistics centres. PC 05. Ability to manage freight traffic by mode of transport. PC 06. Ability to manage passenger transportation by mode. PC 07. Ability to manage traffic flows. PC 08. Ability to manage the reliability and efficiency of transport systems and technologies PC 09. Ability to carry out expertise of transport accidents by mode PC 10. Ability to take into account the impact of customs procedures in the formation of transport technologies. PC 11. Ability to use advanced computer software products in the field of transportation systems and technologies.
Professional competencies of the specialty (PCI) defined by the higher education institution	PCI–12. Ability to analyze the activity of the transport system in the main areas and identify existing problems, to develop measures to overcome them. PCI–13. Ability to evaluate the performance of transport systems. Ability to research and design transport infrastructure. PCI–14. Ability to manage urban and regional transportation systems using mathematical models and methods taking into account environmental influences. PCI–15. Ability to form transport systems at macro-, meso- and micro-levels with the study of evaluation of the influence of subsystem interaction on the efficiency of functioning. PCI–16. Ability to make scientifically sound decisions on the organization of transport processes at the national and international levels.

	PCI–17. Ability to apply modern methods and methodological approaches to scientific research on the parameters of the functioning of transport systems
7 – Program Learning Outcomes	

Program learning outcomes defined by the standard of higher education of the specialty	PLO–01. Analyze information sources, criticize, discuss, draw conclusions on the chosen topic in state and foreign languages. PLO–02. Present the results of the analysis or research in printed or another form in the state and foreign language. Translate terms, summary, and abstract into a foreign language. PLO–03. Use new knowledge and skills in practice, in particular in new areas of knowledge, directly not related to the field of activity. PLO–04. Be able to transfer their knowledge, decisions, and grounds for their adoption to specialists and non-specialists in a clear and unambiguous form, to present the results of work performed in the form of reports, abstracts, scientific articles, reviews, and applications for inventions. PLO–05. To choose the necessary provisions from the legislation on labour protection, civil protection, and environmental protection, concerning the relevant research issues. Put these provisions into practice. PLO–06. To substantiate the need to develop new and improve existing transportation systems and technologies, to determine the development goals, performance criteria, and scope. PLO–07. Know and apply the necessary research methods and tools, develop and analyze physical, mathematical, and computer models of research objects related to the operation of transport systems and the improvement of transport technologies. PLO–08. To develop technologies of freight and passenger transportation using modelling of processes of cargo transportation by modes. PLO–09. Develop technology for the transportation of passengers and goods in international connection. Investigate the impact of customs procedures on the efficiency of transport technologies PLO–10. To substantiate the feasibility of using modern technologies of freight forwarding services. PLO–11. Conduct analysis and calculation of performance indicators of supply chains and logistics centres. Use information resources for supply chain modelling. PLO–12. Manage technological processes under their duties; ensure the technical safety of production in the field of their professional activity. PLO–13. Organize the work and manage the primary production, design or research unit. PLO–14. Use modern computer software for the analysis, development, and improvement of transportation systems and technologies.

Program learning outcomes defined by the higher education institution	PLOI-15. Improvement of approaches and methods for research and operation management of integrated transport systems. PLOI-16. Substantiation of the feasibility of measures for improvement of transport technologies using modelling of transport processes. Evaluate the effectiveness of the chosen measures. PLOI-17. To substantiate the feasibility of using modern technologies of freight forwarding services. PLOI-18. Improve approaches and methods for conducting commercial, technical, social, environmental, institutional, financial and economic analysis in the development of innovation and investment projects. PLOI-19. Analyze and justify the application of modern techniques, can analyze and calculate the economic indicators of the supply chain and logistics centres. Use information resources for supply chain modelling. PLOI-20. To develop measures for the management of cargo transportation using modelling of processes of cargo transportation by modes. PLOI-21. To develop measures for the management of passenger transportation using modelling of transportation processes of passengers by modes of transport. PLOI-22. To analyze and substantiate the feasibility of applying scientific recommendations and modern methods of traffic control of vehicles (ships). PLOI-23. Have the skills to study theoretical and experimental models of managing the reliability and efficiency of transport technologies by modes of transport. PLOI-24. Have skills in the application of modern methods of expertise in transport accidents.
8 – Resource support for the implementation of the program	
Personnel support	The qualitative level of professional training of masters ensures by the qualified scientific and pedagogical staff of the department, which includes doctors and candidates of sciences, professors, associate professors, specialty disciplines are taught by practitioners who lead the structural units of transport and logistics infrastructure companies and have extensive experience. Five teachers have a certificate of proficiency in English at level B-2; eight teachers have completed international internships.
Material and technical support	Lectures are held in classrooms with multimedia equipment. Practical classes are held in specialized computer classes using information and communication equipment, using information systems and software used in transportation technologies. Many of these products have already been adopted or are being actively implemented in the educational process: MS Project, Teamwork, TeamLab., Open Workbench., GanttProject, dotProject., EverNote, Nirvana, Wunderlist, Toggl, Office 365, Document. online AllFusion Process Modeler 7, MS Visio, Libre office Impress, FreeMind, Mind42, ViSta, MacANOVA, Matrixer. Simulation software AnyLogic i Vissum,

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Informational, educational and methodological support	All educational components of the educational and scientific program Transport systems are provided with the following educational and methodical materials: textbooks; tutorials; lecture notes; methodical instructions and recommendations; individual tasks; collections of situational tasks (cases); examples of solving typical tasks or completing typical tasks computer presentations; illustrative materials; resource directories and more. All teaching materials are available to students in the reading rooms of the Scientific Library http://library.kname.edu.ua /index.php/en/, including in the Information Room, equipped with computers with Internet access and the University's local network, in the digital repository http://eprints.kname.edu.ua, on the portal of the Distance Learning Center http://cdo.kname.edu.ua/
9 – Academic mobility	
National Credit Mobility	Under Regulations on Academic Mobility of students, postgraduates, doctoral students, scientific and pedagogical, and scientific workers of O.M. Beketov NUUE.
International Credit mobility	Agreement on cooperation between O.M. Beketov NUUE and: - Middle East Technical University (Turkey, Ankara), agreement No. 69 of March 28, 2016; - University of Nova Gorica (Slovenia), agreement No. 88, of October 10, 2017; - Lodz Technical University (Poland), agreement No. 89 of October 11, 2017; - Aristotle University of Thessaloniki (Greece, Thessaloniki), agreement No. 75 of February 22, 2018.
Teaching foreign applicants for higher education	Under the Rules for admission to training of O.M. Beketov NUUE