

Subject card

Subject name and code	Digitization in Transport, PG_00199902						
Field of study	Economics						
Date of commencement of studies	October 2026	Academic year of realisation of subject			2028/2029		
Education level	Bachelor's studies	Subject group			Obligatory subject group in the field of study Optional subject group Subject group related to scientific research in the field of study		
Mode of study	part-time studies	Mode of delivery			at the university		
Year of study	3	Language of instruction			Polish		
Semester of study	6	ECTS credits			4.0		
Learning profile	academic	Assessment form			exam		
Conducting unit	Department of Transport Economics -> Faculty of Economics -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. Przemysław Borkowski				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	10.0	10.0	0.0	6.0	0.0	26
	E-learning hours included: 0.0						
Learning activity and number of study hours	Learning activity	Participation in didactic classes included in study plan		Participation in consultation hours		Self-study	SUM
	Number of study hours	26		0.0		74.0	100
Subject objectives	The aim of the course is to familiarize students with the impact of advanced technological solutions on the development of transportation. The issues of dynamic changes in both passenger and freight transport will be considered in the context of addressing current problems in transportation systems (such as low efficiency, disintegration, environmental pollution, and congestion).						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[EKONL3_K01] recognises the importance of economic knowledge in identifying and solving economic problems and of consulting experts when difficulties in solving them independently	The student is able to use the knowledge of economics in solving problems related to digitalization of processes	[SK5] implementation of a problem task
	[EKONL3_W03] knows the relations between economic agents and social organisations operating in the national, international and intercultural arenas	The student has the knowledge about the digitalization of business processes in the field of transportation	[SW1] oral statement/ conversation/discussion [SW5] implementation of a problem task
	[EKONL3_W02] has an advanced knowledge of the different types of existing business entities and organisations and public institutions	The student acquires the knowledge about various types of entities and businesses operating in transport industry	[SW1] oral statement/ conversation/discussion [SW5] implementation of a problem task
	[EKONL3_W08] has an advanced knowledge of the processes of changing elements, enterprises and whole structures of economic organisations, as well as the processes of changing social institutions, knows what their causes, course, scale, consequences are and what the influence of external stakeholders is on them	The student has the knowledge about the changes resulting from the digitalization of business processes in supply chains	[SW1] oral statement/ conversation/discussion [SW5] implementation of a problem task
	[EKONL3_U04] can predict and forecast the course of economic and social processes and phenomena	The student is able to forecast and plan the digitalization activities in a company	[SU5] implementation of a problem task
	[EKONL3_K05] correctly identifies, diagnoses and resolves professional dilemmas and different options for solutions	The student is able to propose creative solutions to problems related to the digital processes in transportation	[SK5] implementation of a problem task
	[EKONL3_U03] is able to analyse the causes and course of specific economic and social processes and phenomena, and accurately analyse these phenomena using adequate methods and tools economic and social	The student is able to analyze the course and results of digital processes in transport industry	[SU5] implementation of a problem task
Subject contents	<ol style="list-style-type: none"> 1. Development trends in passenger/freight transport technology 2. Automation in transportation (across various branches of transport) 3. Electronic toll collection for road transport 4. Utilization of modern technologies in tourism traffic management 5. IoT, Physical Internet 6. Digitalization in urban deliveries 7..Autonomous and low-emission technologies in transportation 8. Digital logistics platforms 9.. Cybersecurity in digital transport data <p>To further develop the concepts discussed during the lectures, students may take advantage of consultation hours.</p>		
Prerequisites and co-requisites	Knowledge of the principles of operation of transport companies		

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	problem solving task	51.0%	80.0%
	in-class discussion	51.0%	20.0%
Recommended reading	Basic literature	<p>1. Bąk M., Borkowski P., Intelligent IT technologies used to improve the efficiency of regulations in European road transport - case of new generation tachographs, <i>Studia i Prace Kolegium Zarządzania i Finansów</i> nr 166/2018,</p> <p>2. Bąk M., Burnewicz J. Challenges for multimodal passenger transport, W: <i>Multimodal transport security : frameworks and policy applications in freight and passenger transport / Szyliowicz Joseph S.[i in.](red.)</i>, Comparative Perspectives on Transportation Security, 2016, Edward Elgar, I</p> <p>3. Książkiewicz D., <i>Usługi logistyczne w warunkach cyfryzacji gospodarki</i>, Wydawnictwo UG, Gdańsk 2021</p> <p>4. Matusiewicz M., Logistics of the future - Physical Internet and its practicality, <i>Transportation Journal</i>, 2020, vol. 59, nr 2, s.200-214.</p> <p>5. Russo F., Comi A., Investigating the Effects of City Logistics Measures on the Economy of the City. <i>Sustainability</i> 2020, 12, 1439. https://doi.org/10.3390/su12041439</p>	
	Supplementary literature	<p>1. Bąk M. Borkowski P., Young transport users perception of ICT solutions change , <i>Social Sciences, Multidisciplinary Digital Publishing Institute</i>, vol. 8, nr 8, 2019, s. 1-17, DOI:10.3390/socsci8080222, 40 punktów</p> <p>2. Bąk M., Borkowski P., Uwarunkowania i możliwości rozpowszechniania technologii teleinformatycznych (ICT) w transporcie pasażerskim, <i>Zeszyty Naukowe Uniwersytetu Gdańskiego. Ekonomia Transportu i Logistyka</i>, nr 49/2013, ISSN 0208-4821</p> <p>3. Bąk M., Ważna A., Informacja i zintegrowany bilet jako rozwiązania wspierające integrację transportu, <i>Zeszyty Naukowe Uniwersytetu Gdańskiego. Ekonomia Transportu i Logistyka</i>, Uniwersytet Gdanski, nr 45, 2012, s. 137-147</p>	
	eResources addresses		
Example issues/ example questions/ tasks being completed			
Work placement	Not applicable		

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