University of Gdańsk

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	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 To further develop the concepts discussed during the lectures, students may take advantage of consultation hours.
Prerequisites and co-requisites	Knowledge of the principles of operation of transport companies

<table>
<tr><td>Assessment methods and criteria</td><td colspan="2"><table>
<tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr>
<tr><td>problem solving task</td><td>51.0%</td><td>80.0%</td></tr>
<tr><td>in-class discussion</td><td>51.0%</td><td>20.0%</td></tr>
</table></td></tr>
<tr><td rowspan="3">Recommended reading</td><td>Basic literature</td><td>1. Bąk M., Borkowski P., Intelligent IT technologies used to improve the efficiency of regulations in European road transport - case of new generation tachographs, Studia i Prace Kolegium Zarządzania i Finansów nr 166/2018,

2. Bąk M., Burnewicz J. Challenges for multimodal passenger transport, W: Multimodal transport security : frameworks and policy applications in freight and passenger transport / Szyliowicz Joseph S.[i in.](red.), Comparative Perspectives on Transportation Security, 2016, Edward Elgar, I

3. Książkiewicz D., Usługi logistyczne w warunkach cyfryzacji gospodarki, Wydawnictwo UG, Gdańsk 2021

4. Matusiewicz M., Logistics of the future - Physical Internet and its practicality, Transportation Journal, 2020, vol. 59, nr 2, s.200-214.

5. Russo F., Comi A., Investigating the Effects of City Logistics Measures on the Economy of the City. Sustainability 2020, 12, 1439. https://doi.org/10.3390/su12041439</td></tr>
<tr><td>Supplementary literature</td><td>1. Bąk M. Borkowski P., Young transport users perception of ICT solutions change , Social Sciences, Multidisciplinary Digital Publishing Institute, vol. 8, nr 8, 2019, s. 1-17, DOI:10.3390/socsci8080222, 40 punktów

2. Bąk M., Borkowski P., Uwarunkowania i możliwości rozpowszechniania technologii teleinformatycznych (ICT) w transporcie pasażerskim, Zeszyty Naukowe Uniwersytetu Gdańskiego. Ekonomika Transportu i Logistyka, nr 49/2013, ISSN 0208-4821

3. Bąk M., Ważna A., Informacja i zintegrowany bilet jako rozwiązania wspierające integrację transportu, Zeszyty Naukowe Uniwersytetu Gdańskiego. Ekonomika Transportu i Logistyka, Uniwersytet Gdanski, nr 45, 2012, s. 137-147</td></tr>
<tr><td>eResources addresses</td><td></td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td colspan="2"></td></tr>
<tr><td>Work placement</td><td colspan="2">Not applicable</td></tr>
</table>

Document generated electronically. Does not require a seal or signature.