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 Dorota Książkiewicz	
	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_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	[SU2] presentation/project/paper/ report
	[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	[SU1] oral statement/conversation/ discussion [SU2] presentation/project/paper/ report
	[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 digitalisation of transport processes by preparing a project, either individually or in teams, on a topic discussed and approved in consultation with the course instructor, and subsequently presenting it during classes.	[SK1] oral statement/conversation/ discussion [SK2] presentation/project/paper/ report
	[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	[SK2] presentation/project/paper/ report
	[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 [SW2] presentation/project/paper/ report
	[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 [SW2] presentation/project/paper/ report
	[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	[SW2] presentation/project/paper/ report

<table>
<tr><td>Subject contents</td><td>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.</td></tr>
<tr><td>Prerequisites and co-requisites</td><td>Knowledge of the principles of operation of transport companies</td></tr>
<tr><td>Assessment methods and criteria</td><td><table><tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr><tr><td>project presentation</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>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>
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	Supplementary literature	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
	eResources addresses	
Example issues/ example questions/ tasks being completed		
Work placement	Not applicable	

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