



Subject card

Subject name and code	Intermodal transport infrastructure , PG_00044676						
Field of study	Transport						
Date of commencement of studies	October 2021		Academic year of realisation of subject			2023/2024	
Education level	first-cycle studies		Subject group			Optional subject group Subject group related to scientific research in the field of study	
Mode of study	Full-time studies		Mode of delivery			at the university	
Year of study	3		Language of instruction			Polish	
Semester of study	6		ECTS credits			3.0	
Learning profile	general academic profile		Assessment form			assessment	
Conducting unit	Department of Railway Engineering -> Faculty of Civil and Environmental Engineering						
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. Michał Urbaniak				
	Teachers		dr inż. Michał Urbaniak				
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	15.0	0.0	0.0	0.0	30
	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	30		5.0		40.0	75
Subject objectives	The aim of the course is to familiarize students with issues related to intermodal transport infrastructure and the principles of its operation.						
Learning outcomes	Course outcome		Subject outcome			Method of verification	
	[K6_W18] has proficiency in transport infrastructure as appropriate for their specialty		The student is able to develop simple technical, technological and organizational documentation and formulate specifications for simple intermodal transport facilities. The student has structured knowledge in the design, construction and maintenance of intermodal transport infrastructure.				
	[K6_U13] able to select tools and methods, carry out assessments and simple tests of transport infrastructure and means of transport to an extent required of the specialty / learning profile		The student has structured knowledge in the field of transport infrastructure diagnostics and designing corrective actions in the field of roads and railways. The student is able to perform simple diagnostic tests and plan maintenance works for selected transport objects.				

Subject contents	LECTURE 1. Division of multimodal transport 2. Intermodal transport and its infrastructure 3. Intermodal transport systems 4. Types of reloading points and their tasks 5. Gauge 6. Characteristics and types of containers 7. Technical characteristics of the most important lines of intermodal transport 8. Technical requirements for intermodal transport terminals 9. Terminal equipment and their operational equipment 10. Principles of designing terminals with high, medium and low speed 11. Principles and criteria of designing intermodal terminals TUTORIALS Calculation of parameters and equipment of intermodal terminals. Terminal location selection		
Prerequisites and co-requisites	Information on rail and road transport infrastructure and means of transport		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	test	60.0%	50.0%
	tutorials	60.0%	50.0%
Recommended reading	Basic literature	Rydzykowski W., Intermodal transport, Poznań 2015 Jacyna M., Pyza D., Jachimowski R., Intermodal transport. Designing reloading terminals, PWN, Warsaw 2017 Poliński J., The role of railways in intermodal transport, Railway Institute, Warsaw 2015.	
	Supplementary literature	Grulkowski, Koc, Kędra, Nowakowski, Drogi szynowe, Wyd. PG. Gdańsk 2013	
	eResources addresses	Adresy na platformie eNauczanie:	
Example issues/ example questions/ tasks being completed	1. What are transition points? List their types 2. Requirements for railway infrastructure for intermodal transport 3. Basic requirements for the location of intermodal terminals 4. Name the individual elements of the terminal (Annex Document 1) 5. Name the equipment for horizontal transport of containers in the terminal		
Work placement	Not applicable		