



Subject card

Subject name and code	Transportation Engineering [E], PG_00045921						
Field of study	Transport						
Date of commencement of studies	February 2023		Academic year of realisation of subject			2022/2023	
Education level	second-cycle studies		Subject group			Obligatory subject group in the field of study 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	1		Language of instruction			Polish	
Semester of study	1		ECTS credits			3.0	
Learning profile	general academic profile		Assessment form			assessment	
Conducting unit	Department of Transportation Engineering -> Faculty of Civil and Environmental Engineering						
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. Aleksandra Romanowska				
	Teachers		dr inż. Aleksandra Romanowska dr inż. Jacek Szmagliński dr inż. Remigiusz Duszyński dr inż. Sławomir Grulkowski				
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	15.0	0.0	0.0	0.0	45
	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	45		5.0		25.0	75
Subject objectives	Expansion of knowledge in the field of road, rail and water transportation engineering.						
Learning outcomes	Course outcome		Subject outcome			Method of verification	
	[K7_W08] has broad knowledge of transport systems, construction and planning of transport networks and transport system integration		The student has extended knowledge in the field of road, rail and water transportation engineering.			[SW1] Assessment of factual knowledge	
	[K7_U11] able to design elements of transport infrastructure for road, rail, air and water, traction systems for urban transport and long-distance vehicles, apply advanced teleinformatic technologies in transport and logistic systems		The student is able to design elements of road, rail and water transportation infrastructure.			[SU1] Assessment of task fulfilment [SU2] Assessment of ability to analyse information [SU4] Assessment of ability to use methods and tools	

Subject contents	LECTURES: General information from the field of traffic engineering, road infrastructure, road transportation planning. Characteristics and measurement of traffic flow parameters. Basic elements of road transport infrastructure. Road capacity and traffic conditions. General information about the theory of motion of a railway vehicle and traffic resistance acting on the vehicle. Basic elements of the railway infrastructure and the principles of their operation and use. Port as a link in the transport system. Technical infrastructure of inland and maritime ports. Classification and characteristics of cargo occurring in maritime transport. Areas of transshipment of bulk goods, containers, liquid fuels. Yacht ports. Problems of port infrastructure maintenance. Specialization characteristics of sea vessels. Infrastructure of water transport routes. Navigation marks of fairways. Sluice, lift, channels.		
	In the scope of the project he should: be able to design a simple track-and-turn-off system to determine the resistance of motion to physical and kinematic parameters acting on the vehicle. As part of a project related to maritime infrastructure, he should be able to design elements of the port and port infrastructure. As part of the project related to the road transport, he should be able to select road cross section based on forecasted traffic conditions; determine basic micro and macroscopic traffic flow parameters; determine road capacity and traffic conditions of the selected road transport facilities.		
Prerequisites and co-requisites	Basic knowledge of road, rail and water transportation engineering. Completed first-cycle studies in this field.		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Passing lectures	60.0%	60.0%
	Execution and passing the project	60.0%	40.0%
Recommended reading	Basic literature	1. Tolkarz L.: Infrastruktura transportu wodnego. T. 1 i 2, Szczecin 2010 2. Kubicki J.: Organizacja transportu morskiego. WSM, Gdynia 1994 3. Massel A.: Projektowanie linii i stacji kolejowych, Warszawa 2010 4. Basiewicz T., Rudziński L., Jacyna M.: Linie kolejowe, Warszawa 2002 5. Towpik K., Gołaszewski A., Kukulski J. Infrastruktura transportu samochodowego. Oficyna Wydawnicza PW, Warszawa 2006. 6. Gaca S., Suchorzewski W., Tracz M.: Inżynieria ruchu drogowego. WKŁ, 2014	
	Supplementary literature	1. Mazurkiewicz B.: Porty jachtowe-mariny. Projektowanie. Gdynia 2004	
	eResources addresses	Adresy na platformie eNauczanie:	
Example issues/ example questions/ tasks being completed	1. Types of road interchanges and intersections. 2. Macroscopic traffic flow parameters and how they are calculated. 3. Navigation markings of waterways. 4. Basic elements of railway infrastructure		
Work placement	Not applicable		