



## 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	<p>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.</p> <p>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.</p>											
Prerequisites and co-requisites	Basic knowledge of road, rail and water transportation engineering. Completed first-cycle studies in this field.											
Assessment methods and criteria	<table border="1" data-bbox="448 607 1498 712"> <thead> <tr> <th data-bbox="448 607 798 640">Subject passing criteria</th> <th data-bbox="802 607 1142 640">Passing threshold</th> <th data-bbox="1147 607 1498 640">Percentage of the final grade</th> </tr> </thead> <tbody> <tr> <td data-bbox="448 647 798 680">Passing lectures</td> <td data-bbox="802 647 1142 680">60.0%</td> <td data-bbox="1147 647 1498 680">60.0%</td> </tr> <tr> <td data-bbox="448 687 798 712">Execution and passing the project</td> <td data-bbox="802 687 1142 712">60.0%</td> <td data-bbox="1147 687 1498 712">40.0%</td> </tr> </tbody> </table>			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%
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Execution and passing the project	60.0%	40.0%										
Recommended reading	<p>Basic literature</p> <p>Supplementary literature</p> <p>eResources addresses</p>	<ol style="list-style-type: none"> <li>1. Tolkarz L.: Infrastruktura transportu wodnego. T. 1 i 2, Szczecin 2010</li> <li>2. Kubicki J.: Organizacja transportu morskiego. WSM, Gdynia 1994</li> <li>3. Massel A.: Projektowanie linii i stacji kolejowych, Warszawa 2010</li> <li>4. Basiewicz T., Rudziński L., Jacyna M.: Linie kolejowe, Warszawa 2002</li> <li>5. Towpik K., Gołaszewski A., Kukulski J. Infrastruktura transportu samochodowego. Oficyna Wydawnicza PW, Warszawa 2006.</li> <li>6. Gaca S., Suchorzewski W., Tracz M.: Inżynieria ruchu drogowego. WKŁ, 2014</li> </ol> <ol style="list-style-type: none"> <li>1. Mazurkiewicz B.: Porty jachtowe-mariny. Projektowanie. Gdynia 2004</li> </ol> <p>Adresy na platformie eNauczanie:</p>										
Example issues/ example questions/ tasks being completed	<ol style="list-style-type: none"> <li>1. Types of road interchanges and intersections.</li> <li>2. Macroscopic traffic flow parameters and how they are calculated.</li> <li>3. Navigation markings of waterways.</li> <li>4. Basic elements of railway infrastructure</li> </ol>											
Work placement	Not applicable											