



Subject card

Subject name and code	FUNDAMENTALS OF WATER TRANSPORT SYSTEMS, PG_00044609						
Field of study	PODSTAWY SYSTEMÓW TRANSPORTU WODNEGO						
Date of commencement of studies	October 2023		Academic year of realisation of subject		2025/2026		
Education level	first-cycle studies		Subject group				
Mode of study	Full-time studies		Mode of delivery		at the university		
Year of study	3		Language of instruction		Polish		
Semester of study	5		ECTS credits		4.0		
Learning profile	general academic profile		Assessment form		assessment		
Conducting unit	Department of Transportation Engineering -> Faculty of Civil and Environmental Engineering -> Faculties of Gdańsk University of Technology						
Name and surname of lecturer (lecturers)	Subject supervisor		mgr inż. Patrycja Jerzyło				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	15.0	0.0	15.0	0.0	60
	E-learning hours included: 0.0						
	eNauczanie source address: https://enauczanie.pg.edu.pl/2025/course/view.php?id=1939						
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	60		5.0		35.0	100
Subject objectives	The student becomes familiar with basic information on inland and maritime navigation, hydrotechnical structures, sustainable transport, navigation safety, and waterway revitalization.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K6_U04] able to use transport terms properly and speak about a problem using modern audiovisual techniques		The student is able to correctly use concepts related to water transport and speak clearly on a given topic using modern audiovisual techniques.		[SU5] Ocena umiejętności zaprezentowania wyników realizacji zadania [SU4] Ocena umiejętności korzystania z metod i narzędzi [SU3] Ocena umiejętności wykorzystania wiedzy uzyskanej w ramach przedmiotu [SU2] Ocena umiejętności analizy informacji [SU1] Ocena realizacji zadania		
	[K6_W12] has basic knowledge of the design and construction of transport infrastructure		The student has basic knowledge in the design and construction of water transport infrastructure.		[SW3] Ocena wiedzy zawartej w opracowaniu tekstowym i projektowym [SW2] Ocena wiedzy zawartej w prezentacji		
	[K6_W09] has basic knowledge of transport traffic engineering to understand its importance for transport operation and differentiate between how it is applied in different modes of transport		The student has basic knowledge of traffic engineering in water transport to understand its importance for the operation of water transport and the diversity of applications in various transport branches.		[SW1] Ocena wiedzy faktograficznej		
	[K6_W08] understands the theoretical basis of transport processes and systems which is useful for understanding the general transport structures and transport chains		The student will have theoretically based knowledge of water transport processes and systems useful for understanding the general structures and processes of water transport.		[SW1] Ocena wiedzy faktograficznej		

Subject contents	Course content – lecture Regulations, resolutions, circulars regarding water transport, entities responsible for water administration (IMO), organizational structure of water management in Poland, hydrotechnical development of rivers and lakes, characteristics and classification of water transport infrastructure, navigational signs, ship traffic control systems, navigation safety, intermodal transport, maintenance of the navigable route and revitalization of inland navigation, impact of water transport on the environment. Course content – exercises Introductory knowledge of concepts related to waterside landscape design and the design of ports and marinas Course content – project Design of a transshipment base, taking into account the hydrotechnical and transshipment infrastructure and connections with road and rail transport. Introduction to port concepts and maritime hydrotechnical facilities. The ship. Overview of quay hydrotechnical facilities. Quay equipment components: mooring, fenders, entry/exit devices, and safety devices. Calculation of energy required for a ship to berth. Unloading/loading, transshipment devices, and cargo storage and warehousing systems within the port.		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	project	60.0%	30.0%
	presentation	60.0%	30.0%
	test	60.0%	40.0%
Recommended reading	Basic literature	[1] Chuchla Z. Zarządzanie morskim statkiem transportowym oraz jego eksploatacja , Gdynia 2005, [2] Dz.U. 1991 nr 32 poz. 131 Ustawa z dnia 21 marca 1991 r. o obszarach morskich Rzeczypospolitej Polskiej i administracji morskiej, [3] Dz.U. 2001 nr 5 poz. 43 Ustawa z dnia 21 grudnia 2000 r, o żegludze śródlądowej, [4] Girtler J. I inni, Wybrane zagadnienia eksploatacji statków morskich w aspekcie bezpieczeństwa żeglugi Szczecin 2003, [5] Gucma S. Inżynieria ruchu morskiego, Gdańsk 2001,	
	Supplementary literature	[1] Gucma S., Jagniszczak I. Nawigacja dla kapitanów, Fundacja Promocji Przemysłu Okrętowego i Gospodarki Morskiej, 2006 [2] Jagniszczak I. Systemy sterowania i zarządzania ruchem statków, Szczecin 2001, [3] Jagniszczak I. Systemy sterowania i zarządzania ruchem statków i barek na wodach przybrzeżnych i śródlądowych, studia nr 41, Szczecin 2003, [4] Niebieska Księga. Projekty transportu kombinowanego/ intermodalnego. [5] Przepisy Portowe,	
	eResources addresses		
Example issues/ example questions/ tasks being completed	What determines the operation of a seaport? What are the goals of water management? What are the elements of a water barrage?		
Practical activities within the subject	Not applicable		

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