



Subject card

Subject name and code	, PG_00072654						
Field of study	Design and Construction of Yachts, Naval Architecture and Offshore Structures						
Date of commencement of studies	October 2023		Academic year of realisation of subject		2026/2027		
Education level	first-cycle studies		Subject group				
Mode of study	Full-time studies		Mode of delivery		at the university		
Year of study	4		Language of instruction		Polish		
Semester of study	7		ECTS credits		3.0		
Learning profile	general academic profile		Assessment form		assessment		
Conducting unit	Division of Marine Auxiliary Machinery -> Institute of Naval Architecture -> Faculty of Mechanical Engineering and Ship Technology -> Faculties of Gdańsk University of Technology						
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. Jacek Nakielski				
	Teachers		dr inż. Jacek Nakielski				
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	0.0	0.0	0.0	15
	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	15		0.0		0.0	15
Subject objectives	A presentation and analysis of the most significant maritime disasters in the history of modern navigation. A presentation of disasters not only as technical events but also as complex processes with human, legal, organizational, and social implications, leading to the evolution of international maritime law and safety procedures.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K6_U71] is able to apply knowledge from humanistic, social, economic or legal sciences in order to solve problems		The student has knowledge about the history of major maritime disasters, their multi-aspect causes (technical, human, meteorological) and their impact on the development of global safety systems.		[SU1] Assessment of task fulfilment		
	[K6_K71] is able to explain the need to apply knowledge from humanistic, social, economic or legal sciences in order to function in a social environment		The student is able to critically analyze the causes of a maritime accident based on reports from maritime chambers and identify errors in human resources management and procedural errors.		[SK2] Assessment of progress of work		
	[K6_W71] has general knowledge in humanistic, social, economic or legal sciences, including their fundamentals and applications		The student understands the social and ethical responsibility of an engineer for the safety of human life and the protection of the natural environment in marine areas.		[SW2] Assessment of knowledge contained in presentation		

Subject contents	Course content – lecture 1. Introduction to maritime accidents and disasters. Definitions, statistics, human psychology in extreme conditions. (2h) 2. Naval architecture and safety: The tragedy of the transatlantic liner Titanic and the birth of the SOLAS convention. (2h) 3. Ships in difficult hydrometeorological conditions analysis of general cargo ship accidents. Kudowa-Zdrój and Busko-Zdrój. (3h) 4. Ro-ro ships and their stability characteristics causes and course of the Jan Heweliusz and Estonia ferry disasters. (3h) 5. Environmental disasters: Tanker operation: the example of the Exxon Valdez and changes in double-hull regulations. (3h) 6. Summary: The role of the human factor (CRM - Crew Resource Management) in contemporary maritime safety procedures. (2h)		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	test	51.0%	100.0%
Recommended reading	Basic literature	Cawthorne N., Wraki morskie. Tragedia i katastrofy, Wydawnictwo Bellona, Warszawa Mąka H., Katastrofy polskich statków, Wydawnictwo Bellona, Warszawa	
	Supplementary literature	Lord W., Titanic. Pamiętna noc, International Convention for the Safety of Life at Sea.	
	eResources addresses		
Example issues/ example questions/ tasks being completed	1. What key changes in passenger ship design and lifesaving equipment did the Titanic disaster necessitate? 2. Compare the causes of the sinking of the Jan Heweliusz and Estonia ferries. What design and operational lessons were learned for ro-ro ships? 3. Explain the concept of "human error" in the context of the Exxon Valdez tanker disaster.		
Practical activities within the subject	Not applicable		

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