GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	, PG_00058658						
Field of study	Transport and Logistics						
Date of commencement of studies	February 2023		Academic year of realisation of subject		2023/2024		
Education level	second-cycle studies		Subject group				
Mode of study	Full-time studies		Mode of delivery		at the university		
Year of study	1		Language of instruction		Polish Basic knowledge of English required.		
Semester of study	2		ECTS credits		4.0		
Learning profile	general academic profile		Assessment form		assessment		
Conducting unit	Institute of Ocean Engineering and Ship Technology -> Faculty of Mechanical Engineering and Ship Technology						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. inż. Przemysław Krata				
	Teachers						
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	0.0	0.0	30.0	0.0	60
	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	60		0.0	0.0	60	
Subject objectives	The purpose of the course is for students to become familiar with typical hydro-meteorological factors affecting a ship during a sea voyage. The possibilities and limitations resulting from of sea waves and wind together with the variability of these factors provide a basis for understanding the important aspects of optimizing sailing routes.						

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K7_U06] The student is able to notice their non-technical aspects, including environmental, economic and legal aspects when formulating and solving project tasks. Applies the principles of occupational health and safety	The student presents a holistic view of the issues of safety and efficiency of shipping in the context of the impact of the marine environment.	[SU1] Assessment of task fulfilment
[K7_U04] The student is able to use the known methods and mathematical models, as well as computer simulations to analyze, design and evaluate the functioning of transport systems or their components	The student can use knowledge and hydro-meteorological information to plan a sailing schedule and a sample sailing route.	[SU4] Assessment of ability to use methods and tools
[K7_K02] The student is aware of the importance of non-technical aspects and the effects of engineering activities, including its impact on the natural environment and the related responsibility for decisions made	The student gains an awareness of the importance of the impact of hydro-meteorological conditions on the safety of navigation.	[SK5] Assessment of ability to solve problems that arise in practice
[K7_U01] The student can obtain information from literature, databases and other, properly selected sources, also in English; is able to integrate the obtained information, interpret it, as well as draw conclusions and formulate and justify opinions	The student is able to acquire information on wind and wave forecast and use it in the process of planning and modifying the schedule of shipping connections and shipping routes.	[SU2] Assessment of ability to analyse information
[K7_W02] The student has an extensive knowledge of modeling transport processes, including the knowledge necessary to describe and evaluate the functioning of selected elements of the transport system	The student acquires knowledge of the impact of the environment on a seagoing vessel.	[SW2] Assessment of knowledge contained in presentation

Subject contents

An overview of the impact of the marine environment on the ship and the ship's response. Identify sources of weather data acquisition. A discussion of the implications of various ship operating conditions. Describing the purpose and scope of optimizing sailing schedules and routes.

Prerequisites and co-requisites

General knowledge of the ship as a means of transportation and its operating environment.

Basic knowledge of sea waves.

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
Evaluation of the performance of the task	50.0%	100.0%

Recommended reading

Basic literature	*MSC*.1/*Circ.1228*. 11 January 2007. REVISED GUIDANCE TO THE MASTER FOR AVOIDING DANGEROUS. SITUATIONS IN ADVERSE WEATHER AND SEA CONDITIONS. MSC.1-Circ.1627 INTERIM GUIDELINES ON THE SECOND GENERATION INTACT STABILITY CRITERIA
Supplementary literature	Matusiak J. Dynamics of a rigid ship
eResources addresses	Adresy na platformie eNauczanie:

Example issues/ example questions/ tasks being completed

Characterize the impact of sea waves on the safety of ship navigation.

Describe the dangerous dynamic phenomena associated with sailing in rough seas.

Discuss ways of obtaining weather information in marine navigation.

Discuss the principles of selecting and modifying sailing schedules and routes.

Work placement

Not applicable