GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Ship Operability, PG_00045118		
Field of study	Ocean Engineering, Ocean Engineering		
Date of commencement of studies	October 2020	Academic year of realisation of subject	2022/2023
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	6	ECTS credits	4.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Faculty of Ocean Engineering and Ship Technology		
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Mohammad Ghaemi	
	Teachers		

Lesson types and methods of instruction

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	45.0	0.0	0.0	0.0	15.0	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	10.0	30.0	100

Subject objectives

The aim of the course is to familiarize students with the concept of ship operability by combining ship menoeuvrability and sea-keeping analysis in the context of ship safety as an overall system, reliable and, if possible, optimal operation of all ship subsystems, taking into account interactions between these subsystems, as well as interactions between the ship and its subsystems with the ship's environment, and also the safety and comfort of the crew and passengers, and the cargo safety.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_W06] has an organized knowledge on engineering methods and design tools allowing the conducting of projects within the construction and operation of ocean technology objects and systems	The student has a structured knowledge of the engineering methods needed for the general analysis of the maneuvering and sea-keeping characteristics of a ship as an integrated system containing interacted subsystems.	[SW1] Assessment of factual knowledge [SW2] Assessment of knowledge contained in presentation
[K6_U05] can formulate a simple engineering task and its specification within the range of design, construction and operation of ocean technology objects and systems	The student is able to formulate the ship operability indexes.	[SU3] Assessment of ability to use knowledge gained from the subject [SU4] Assessment of ability to use methods and tools
[K6_W05] has an organized knowledge on design, construction and operation of ocean technology objects and systems	The student has a structured basic knowledge of the integrated ocean engineering systems in terms of safety, reliability, and comfort by considering ship's subsystems interactions and environmental conditions.	[SW1] Assessment of factual knowledge [SW2] Assessment of knowledge contained in presentation

Subject contents

1. Basic concepts: system, subsystem, integrated system, subsystem interactions, ship operability
2. Modeling of the ship's motion and its subsystems
3. Review of the maneuvering characteristics of the ship and the applied criteria in this regard
4. Review of the ship's sea-keeping criteria and analysis of environmental impacts
5. Ship's operability criteria and indexes
6. Analysis of the ship's operability and its tools

<table>
<tr><td>Prerequisites and co-requisites</td><td colspan="3">- Marine hydromechanics

- Systems theory (basic level)</td></tr>
<tr><td>Assessment methods and criteria</td><td colspan="3"><table>
<tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr>
<tr><td>Colloquium</td><td>50.0%</td><td>75.0%</td></tr>
<tr><td>Presentation</td><td>50.0%</td><td>25.0%</td></tr>
</table></td></tr>
<tr><td rowspan="3">Recommended reading</td><td>Basic literature</td><td colspan="2">Lloyd, A.R.J.M. (1998). Seakeeping: Ship Behaviour in Rough Weather, Revised ed. Gosport, England: A.R.J.M. Lloyd publisher.

Lewandowski, Edward M (2004). The Dynamics of Marine Craft: Maneuvering and Seakeeping. New Jersey: World Scientific.</td></tr>
<tr><td>Supplementary literature</td><td colspan="2">Mohammad Hossein, Olszewski, Henryk. (2017). TOTAL SHIP OPERABILITY REVIEW, CONCEPT AND CRITERIA. Polish Maritime Research, 24(SI (93)), 74-81. https://doi.org/10.1515/pomr-2017-0014.</td></tr>
<tr><td>eResources addresses</td><td colspan="2">Adresy na platformie eNauczanie:</td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td colspan="3">They will be available on the GUT e-Learning platform (e-Nauczania) on a page devoted to this this course.</td></tr>
<tr><td>Work placement</td><td colspan="3">Not applicable</td></tr>
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