GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	, PG_00056311		
Field of study	Ocean Engineering		
Date of commencement of studies	October 2022	Academic year of realisation of subject	2024/2025
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	2.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Zakład Projektowania Okrętu -> 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	0.0	0.0	30

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	30	3.0	17.0	50

Subject objectives

The purpose of the course is to present the fundamentals of buoyancy and stability of a ship primarily in static approach, with selected elements of dynamics.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_W08] has knowledge of the principles of sustainable development	The student understands the importance of ship stability for the safety of navigation and protection of the marine environment.	[SW1] Assessment of factual knowledge
[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 knows the scope and methods of calculations related to ship hydrostatics and stability.	[SW1] Assessment of factual knowledge

Subject contents

- Fundamentals of determining hydrostatic curves.
- Initial stability of a ship.
- Stability at large angles of heel.
- Righting arm curve and its interpretation.
- Determination of static heel angle of a ship.
- Fundamentals of dynamic stability of a ship.
- Basics of ship stability assessment.

Prerequisites and co-requisites

Basic knowledge of physics and engineering mechanics.

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
Final test	50.0%	100.0%

Recommended reading

Basic literature	Derret, Stability for mates and masters (free to download)
Supplementary literature	Kobyliński L., Kastner S., 2003. Stability and safety of ships, Volume I, Regulation and Operation, Elsevier Ocean Engineering Book Series, volume 9.
eResources addresses	Adresy na platformie eNauczanie:

Example issues/ example questions/ tasks being completed

Developing of ship hydrostatic data.
Displacement and coordinates of the center of gravity calculations.
Determination of the ship's stability characteristics for small and large angles of heel.
Determination of small and large static angle of heel of a ship subjected to external heeling moment.
Determination of the dynamic angle of heel of the ship.

Work placement

Not applicable