GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Ship Theory 2, PG_00051267		
Field of study	Ocean Engineering		
Date of commencement of studies	October 2021	Academic year of realisation of subject	2022/2023
Education level	first-cycle studies	Subject group	Optional subject group Subject group related to scientific research in the field of study
Mode of study	Full-time studies	Mode of delivery	at the university
Year of study	2	Language of instruction	Polish
Semester of study	4	ECTS credits	3.0
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	dr hab. inż. Przemysław Krata	

Lesson types and methods of instruction							
	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	15.0	15.0	0.0	0.0	45
	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	45	5.0	25.0	75

Subject objectives

The objectives are to outline the general background of hydrostatic calculations applicable to ships, yachts and other floating structures. The introduced stability principles are to constitute the basis for future stability calculations performed during the ship design process.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_W05] has an organized knowledge on design, construction and operation of ocean technology objects and systems	The student is able to use the knowledge in the field of ship stability to perform calculations verifying the stability at the initial stage of designing a floating structures.	[SW3] Assessment of knowledge contained in written work and projects
[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 identify problems related to buoyancy and stability of the ship and is able to outline correctly the area of engineering search for solutions to these problems.	[SU1] Assessment of task fulfilment
[K6_W03] has a basic knowledge on hydromechanics, thermodynamics, machine construction, ecology, materials science and electronics necessary to understand the construction and operation principles of ocean technology objects and equipment	The student has a structured knowledge of the static conditions of the ship and the basics of its stability.	[SW1] Assessment of factual knowledge

Subject contents	Basics of determining hydrostatic curves. Initial stability of the ship. Calculation of the drafts at perpendiculars. Stability at large angles of heel. The static stability curve and its interpretation. Determination of the static angle of heel of the ship. Fundamentals of dynamic stability of a ship.
Prerequisites and co-requisites	Basic knowledge of physics and technical mechanics. Ability to use selected computational tools.
Assessment methods and criteria	

Subject passing criteria	Passing threshold	Percentage of the final grade
assigned task evaluation	50.0%	100.0%

Recommended reading	Basic literature	Derret, Stability for mates and masters
	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	Podstawowe https://www.azoresuperyachtservices.pt/images/downloads/SHIP%20STABILITY/Ship%20Stability%20(Masters%20and%20Mates)%20-%20Bryan%20Barrass%20and%20D.R%20Derrett.pdf - The book Stability for mates and masters Adresy na platformie eNauczanie:
Example issues/ example questions/ tasks being completed	Computation of of the Bonjean scale and the hydrostatic curves. Determining the displacement and coordinates of the center of gravity. 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