GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Ship Motion Mechanics 1, PG_00051268		
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	5	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 inż. Michał Krężelewski	
	Teachers	dr inż. Michał Krężelewski mgr inż. Hanna Pruszko	

Lesson types and methods of instruction

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	15.0	0.0	30.0	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 student identifies ship propellers and explains the basics of their operation. He explains the operation of propellers and their cooperation with the ship's hull. Is able to carry out research on the propeller at the stage of the initial ship design.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[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 identifies ship propellers and explains the basics of their operation. He explains the operation of propellers and their cooperation with the ship's hull. Is able to carry out research on the propeller at the stage of the preliminary ship design.	[SU1] Assessment of task fulfilment
[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 identifies ship propellers and explains the basics of their operation. He explains the operation of propellers and their cooperation with the ship's hull. Is able to carry out research on the propeller at the stage of the preliminary ship design.	[SW1] Assessment of factual knowledge
[K6_K03] understands non-technical aspects and effects of operation as an engineer, its influence on the environment and is aware of the responsibilities for the decisions taken	The student identifies ship propellers and explains the basics of their operation. He explains the operation of propellers and their cooperation with the ship's hull. Is able to carry out research on the propeller at the stage of the preliminary ship design.	[SK2] Assessment of progress of work
[K6_W05] has an organized knowledge on design, construction and operation of ocean technology objects and systems	The student identifies ship propellers and explains the basics of their operation. He explains the operation of propellers and their cooperation with the ship's hull. Is able to carry out research on the propeller at the stage of the preliminary ship design.	[SW1] Assessment of factual knowledge

Subject contents	The basic propulsion problem of the ship. Resistance of displacement ships: division, determination methods and model tests. Hydrodynamic characteristics of the airfoil. Ship propellers. The ideal propulsor theory. Geometric characteristics of the propeller. The elementary screw theory. Hydrodynamic characteristics of the propeller: determination methods and model tests. Cavitation phenomenon. Hull - propeller interaction. Overall propulsive efficiency. Propulsive and propeller characteristics. Selection of the serial propeller at the stage of the initial ship design.
Prerequisites and co-requisites	Fluid dynamics.

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
test	60.0%	50.0%
laboratorium	100.0%	50.0%

Recommended reading

Basic literature	Dudziak Jan TEORIA OKRĘTU WYDAWNICTWO MORSKIE, GDAŃSK 1988 Krężelewski Mieczysław HYDROMECHANIKA OGÓLNA I OKRĘTOWA CZ.II SKRYPT PG GDAŃSK 1982 Wełnicki Wiesław MECHANIKA RUCHU OKRĘTU SKRYPT PG, GDAŃSK 1989
Supplementary literature	Wełnicki Wiesław STEROWNOŚĆ OKRĘTU PWN WARSZAWA 1966
eResources addresses	Adresy na platformie eNauczanie:

Example issues/ example questions/ tasks being completed	
Work placement	Not applicable