



Subject card

Subject name and code	Ship Motion Mechanics 1, PG_00046544						
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	Part-time studies	Mode of delivery			at the university		
Year of study	3	Language of instruction			Polish		
Semester of study	6	ECTS credits			3.0		
Learning profile	general academic profile	Assessment form			assessment		
Conducting unit	Department of Ship Manufacturing Technology, Quality Systems and Materials Science -> Faculty of Mechanical Engineering and Ship Technology						
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Michał Krężelewski					
	Teachers	dr inż. Michał Krężelewski					
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	10.0	0.0	20.0	0.0	0.0	30
	E-learning hours included: 0.0						
Address on the e-learning platform: https://enauczanie.pg.edu.pl/moodle/course/view.php?id=8751							
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	6.0		39.0		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. Designs and calculates the propeller at the initial ship design stage.						
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				[SW1] Assessment of factual knowledge		
	[K6_W05] has an organized knowledge on design, construction and operation of ocean technology objects and systems				[SW1] Assessment of factual knowledge		
	[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				[SU1] Assessment of task fulfilment [SU3] Assessment of ability to use knowledge gained from the subject		
[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				[SK5] Assessment of ability to solve problems that arise in practice [SK1] Assessment of group work skills			
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 mechanics. Principles of naval architecture.		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
		60.0%	50.0%
		100.0%	50.0%
Recommended reading	Basic literature	Dudziak Jan TEORIA OKRĘTU WYDAWNICTWO MORSKIE, GDĄSK 1988 Krężelewski Mieczysław HYDROMECHANIKA OGÓLNA I OKRĘTOWA CZ.II SKRYPT PG GDĄSK 1982 Wełnicki Wiesław MECHANIKA RUCHU OKRĘTU SKRYPT PG, GDĄSK 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		