



Subject card

Subject name and code	Hydromechanic Principles in Ship Design and Ship Motion, PG_00057229						
Field of study	Ocean Engineering						
Date of commencement of studies	February 2023	Academic year of realisation of subject			2023/2024		
Education level	second-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	1	Language of instruction			Polish		
Semester of study	2	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 inż. Maciej Reichel				
	Teachers		dr inż. Maciej Reichel				
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	0.0	15.0	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		5.0		15.0	50
Subject objectives	To acquaint students with the methods and ways of using the results of model tests and hydromechanical analysis in practice.						
Learning outcomes	Course outcome	Subject outcome			Method of verification		
	[K7_U04] can apply mathematical methods and models and computer simulations to analyse, design, and assess the functioning of ocean technology objects and systems and their elements				[SU4] Assessment of ability to use methods and tools [SU2] Assessment of ability to analyse information [SU1] Assessment of task fulfilment		
	[K7_W05] has an organized, widened knowledge on design, construction and operation of ocean technology objects and systems				[SW1] Assessment of factual knowledge		
	[K7_W06] has an organized, widened knowledge on engineering methods and design tools allowing the conducting of advanced projects within the construction and operation of ocean technology objects and systems				[SW1] Assessment of factual knowledge		
Subject contents	Discussion of a few cases of designing and optimization of various ship components based on the analysis of model test results.						
Prerequisites and co-requisites	Principle of naval architecture. Principles of hydrodynamics Ship Motion Mechanics I, II						

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
		80.0%	25.0%
		100.0%	75.0%
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 198	
	Supplementary literature	Wełnicki Wiesław STEROWNOŚĆ OKRĘTU PWN WARSZAWA 1966	
	eResources addresses	Adresy na platformie eNauczenie: Hydromechaniczne podstawy projektowania (HPP, 2 st, stacj. II semestr) - Moodle ID: 34908 https://enauczenie.pg.edu.pl/moodle/course/view.php?id=34908	
Example issues/ example questions/ tasks being completed	<p>optimization of the number, position and shape of bow thrusters</p> <p>optimization of appendages - anti-roll keels, shaft brackets</p> <p>rudder position optimization</p> <p>optimization of container ship trim</p> <p>shape optimization of the stern part of the course-unstable gas carrier</p>		
Work placement	Not applicable		