



## Subject card

Subject name and code	Hydromechanics of Ship, PG_00045052						
Field of study	Ocean Engineering, Ocean Engineering						
Date of commencement of studies	October 2020		Academic year of realisation of subject		2021/2022		
Education level	first-cycle studies		Subject group				
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	Zakład Hydromechaniki i Hydroakustyki 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. Michał Krężelewski				
	Teachers		dr inż. Michał Krężelewski				
			dr inż. Ewelina Ciba				
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	0.0	15.0	0.0	0.0	45
	E-learning hours included: 0.0						
	Adresy na platformie eNauczanie:						
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 recognizes basic problems connected with flows and flows around bodies. Uses the laws and methods of hydromechanics and can apply them to ship and ocean structures.						
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 recognizes basic problems connected with flows and flows around bodies. Uses the laws and methods of hydromechanics and can apply them to ship and ocean structures.		[SW1] Assessment of factual knowledge		
	[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 recognizes basic problems connected with flows and flows around bodies. Uses the laws and methods of hydromechanics and can apply them to ship and ocean structures.		[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		The student recognizes basic problems connected with flows and flows around bodies. Uses the laws and methods of hydromechanics and can apply them to ship and ocean structures.		[SU3] Assessment of ability to use knowledge gained from the subject [SU4] Assessment of ability to use methods and tools		
Subject contents	Surface forces. Boundary layer and hydrodynamic wake. The similarity of flows and modeling laws. Ship resistance. Basic field theory. Field operators: gradient, velocity flux, divergence, rotation and circulation of velocity. Basic wing theory: geometrical and hydrodynamic characteristics of foils. Potential flows. Gravity waves.  Laboratory: practical examples of using the content of lectures in engineering practice.						
Prerequisites and co-requisites	Fluid Mechanics						

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Laboratory	100.0%	50.0%
	Lecture	50.0%	50.0%
Recommended reading	Basic literature	Dudziak J. Teoria Okrętu, 2008 Gdańsk  Krężelewski M. Hydromechanika ogólna i okrętowa, strypt PG Tom I , II, Gdańsk 1982	
	Supplementary literature	Birk Lothar Fundamentals of Ship Hydrodynamics, Wiley 2019	
	eResources addresses		
Example issues/ example questions/ tasks being completed			
Work placement	Not applicable		