



Subject card

Subject name and code	, PG_00043295						
Field of study	Coastal and Offshore Engineering, Coastal and Offshore Engineering						
Date of commencement of studies	February 2022	Academic year of realisation of subject			2022/2023		
Education level	second-cycle studies	Subject group			Obligatory subject group in the field of study 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			5.0		
Learning profile	general academic profile	Assessment form			exam		
Conducting unit	Faculty of Ocean Engineering and Ship Technology						
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Jerzy Kowalski					
	Teachers	dr hab. inż. Jerzy Kowalski mgr inż. Ewelina Ciba					
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	30.0	0.0	0.0	0.0	60
	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	60	15.0		50.0	125	
Subject objectives	Acquiring general knowledge in the field of modeling and computer simulations used in ocean engineering						
Learning outcomes	Course outcome	Subject outcome			Method of verification		
	K7_U03	Student defines a computational model and conducts advanced numerical analysis of hydrotechnical engineering structures and a critical analysis of the calculation results			[SU2] Assessment of ability to analyse information		
	K7_W03	Student has knowledge to model structures and knows the rules of calculating engineering structures			[SW1] Assessment of factual knowledge		
	K7_U08	Student plans and conducts laboratory or model experiments that are the basis for assessing the behavior of hydrotechnical facilities and the quality of the materials used, as well as assessing the strength of structural elements			[SU2] Assessment of ability to analyse information		
	K7_W01	Student can carry out the design process of technical structures in terms of mathematics and computer algorithms			[SW1] Assessment of factual knowledge		

Subject contents	<p>Ocean technology - basic issues and areas of activity, Modeling - classification, model construction and their complexity, adequacy of models and their validation, simulation of phenomena, analysis of modeling results, Simulation - research on models, initial conditions, boundary conditions, Optimization - Optimization and polyoptimization problems, data sets and functions, objective functions, classification, optimization methods, Modeling in ocean technology - modeling in ship design, modeling in power engineering, modeling in environmental protection.</p>											
Prerequisites and co-requisites	overall knowledge in the field of ocean engineering											
Assessment methods and criteria	<table border="1"> <thead> <tr> <th data-bbox="456 499 798 533">Subject passing criteria</th> <th data-bbox="801 499 1139 533">Passing threshold</th> <th data-bbox="1142 499 1487 533">Percentage of the final grade</th> </tr> </thead> <tbody> <tr> <td data-bbox="456 535 798 568"></td> <td data-bbox="801 535 1139 568">60.0%</td> <td data-bbox="1142 535 1487 568">50.0%</td> </tr> <tr> <td data-bbox="456 571 798 602"></td> <td data-bbox="801 571 1139 602">60.0%</td> <td data-bbox="1142 571 1487 602">50.0%</td> </tr> </tbody> </table>	Subject passing criteria	Passing threshold	Percentage of the final grade		60.0%	50.0%		60.0%	50.0%		
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Recommended reading	Basic literature	Springer handbook of ocean engineering Manhar R. Dhanak, Nikolaos I. Xiros Springer, 2016.										
	Supplementary literature	Ship-shaped offshore installations : design, building, and operation / Jeom Kee Paik, Anil Kumar Thayamballi, Canbridge, 2011.										
	eResources addresses											
Example issues/ example questions/ tasks being completed												
Work placement	Not applicable											