



## Subject card

Subject name and code	Special Purpose Equipment, PG_00045079						
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			4.0		
Learning profile	general academic profile	Assessment form			assessment		
Conducting unit	Faculty of Ocean Engineering and Ship Technology						
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Wojciech Litwin					
	Teachers	dr inż. Jacek Nakielski dr inż. Magdalena Kunicka					
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	15.0	0.0	15.0	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	7.5		32.5		100
Subject objectives	The aim of the course is to familiarize students with the structure, operation and design of modern, especially atypical, devices used in shipbuilding and offshore industry, as well as reloading in ports.						
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	Analyzes in terms of reliability and economic variants of possible design solutions, selects and prepares drawing documentation and technical conditions for the user of the device			[SW3] Assessment of knowledge contained in written work and projects		
	[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	Distinguishes between the types of currently used devices, their functions, design, method of operation and can determine their suitability in various types of ship systems, port and offshore facilities, both for transshipment and searching for and exploitation of marine mineral resources			[SU2] Assessment of ability to analyse information [SU3] Assessment of ability to use knowledge gained from the subject		
	[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	Can determine the nature of the working loads of the designed device and calculate stresses in important structural elements and nodes using modern computer software			[SW2] Assessment of knowledge contained in presentation		

Subject contents	<p>Lecture</p> <p>As part of the lecture, students will learn about the function, structure and principle of operation of specialized modern devices, including: - used for transport and transshipment in port and at sea; containers, large objects (e.g. platforms, wind turbines), dry bulk goods (coal, gravel, sand), liquid raw materials (oil, gas), - for the extraction of raw materials lying at the bottom of the seas and oceans, namely sand, gravel, diamonds, polymetallic nodules, others, and being equipped with various types of dredgers, e.g. scoop, suction, suction-milling, and special ships with underwater vehicles and air-systems lift, - specialized equipment for the laying of pipelines and submarine cables, as well as for the equipment of platforms and drilling vessels.</p> <p>Exercise</p> <p>As part of the exercises, students analyze the operating states of exemplary special devices, determine the values and place of maximum loads, and then calculate the stresses occurring there.</p> <p>Design</p> <p>Each student receives a different device or mechanism to design, and as part of the project must perform an analysis of existing similar devices, adopt a favorable solution from among the existing ones or propose his own, analyze the operating states of the designed device and determine the maximum loads and stresses in important elements, and then prepare a drawing documentation containing assembly drawing and production drawings of two selected elements.</p>											
Prerequisites and co-requisites												
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Example issues/ example questions/ tasks being completed												
Work placement	Not applicable											