



Subject card

Subject name and code	Marine Special Systems, PG_00060569						
Field of study	Naval Architecture and Offshore Structures						
Date of commencement of studies	October 2026	Academic year of realisation of subject				2028/2029	
Education level	first-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	3	Language of instruction				Polish	
Semester of study	6	ECTS credits				6.0	
Learning profile	general academic profile	Assessment form				assessment	
Conducting unit	Institute of Naval Architecture -> Faculty of Mechanical Engineering and Ship Technology -> Faculties of Gdańsk University of Technology						
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Jacek Nakielski					
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	30.0	0.0	15.0	0.0	75
	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	75	8.0		67.0	150	
Subject objectives	The aim of the course is to familiarize students with the construction, operation, and design of contemporary, especially unconventional, devices used in shipbuilding and the offshore industry, as well as in port handling.						
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	Analizuje wieloaspektowo warianty możliwych rozwiązań konstrukcyjnych, dokonuje odpowiedniego wyboru. Wykonuje dokumentację techniczną oraz rysunkową dla wybranego okrętowego systemu specjalnego.			[SW3] Assessment of knowledge contained in written work and projects		
	[K6_K03] is aware of the impact of non-technical aspects on the engineer's work and the impact of engineering activities on the natural environment	They will be able to determine the nature of the working loads of the designed device and calculate stresses in important structural elements and joints using modern computer software.			[SK5] Assessment of ability to solve problems that arise in practice		
	[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	Rozróżnia rodzaje stosowanych obecnie okrętowych systemów specjalnych wraz z ich funkcjami, konstrukcją oraz sposobem działania. Potrafi określić ich przydatność w różnego rodzaju systemach okrętowych, portowych i obiektach offshore zarówno do przeładunków jak i poszukiwania, badania i eksploatacji podmorskich surowców mineralnych.			[SU3] Assessment of ability to use knowledge gained from the subject [SU2] Assessment of ability to analyse information		

Subject contents	<p>Course content – lecture Lecture:</p> <p>During the lecture, students will become familiar with the construction and principles of operation of maritime special systems including:</p> <p>1. Handling equipment:</p> <ul style="list-style-type: none"> <li>• Containers, palletized cargo, large objects (e.g., platforms, wind turbine components, etc.);</li> <li>• Dry bulk goods (coal, metal ores, timber, grain, foodstuffs, fertilizers, cement);</li> <li>• Liquid cargoes (crude oil, petroleum processing products, chemicals, liquefied gas cargoes).</li> </ul> <p>2. Waterway dredging equipment (bucket dredgers, suction dredgers, suction-cutter dredgers, etc.), as well as equipment for extracting resources lying on the seabed (gravel, polymetallic nodules, etc.).</p> <p>3. Specialized equipment:</p> <ul style="list-style-type: none"> <li>• Used for laying submarine cables and pipelines;</li> <li>• Found on offshore platforms and units.</li> </ul> <p>Exercises:</p> <p>During exercises, students analyze the operational states of example special equipment, determine the values and locations of maximum loads, and then calculate the stresses occurring there.</p>														
Prerequisites and co-requisites															
Assessment methods and criteria	<table border="1" data-bbox="451 918 1487 1055"> <thead> <tr> <th data-bbox="451 918 794 949">Subject passing criteria</th> <th data-bbox="794 918 1137 949">Passing threshold</th> <th data-bbox="1137 918 1487 949">Percentage of the final grade</th> </tr> </thead> <tbody> <tr> <td data-bbox="451 949 794 981">Lecture</td> <td data-bbox="794 949 1137 981">51.0%</td> <td data-bbox="1137 949 1487 981">40.0%</td> </tr> <tr> <td data-bbox="451 981 794 1012">Exercises</td> <td data-bbox="794 981 1137 1012">51.0%</td> <td data-bbox="1137 981 1487 1012">30.0%</td> </tr> <tr> <td data-bbox="451 1012 794 1055">Project</td> <td data-bbox="794 1012 1137 1055">51.0%</td> <td data-bbox="1137 1012 1487 1055">30.0%</td> </tr> </tbody> </table>			Subject passing criteria	Passing threshold	Percentage of the final grade	Lecture	51.0%	40.0%	Exercises	51.0%	30.0%	Project	51.0%	30.0%
Subject passing criteria	Passing threshold	Percentage of the final grade													
Lecture	51.0%	40.0%													
Exercises	51.0%	30.0%													
Project	51.0%	30.0%													
Recommended reading	<table border="1" data-bbox="451 1064 1487 1160"> <tbody> <tr> <td data-bbox="451 1064 794 1095">Basic literature</td> <td colspan="2" data-bbox="794 1064 1487 1095">-</td> </tr> <tr> <td data-bbox="451 1095 794 1126">Supplementary literature</td> <td colspan="2" data-bbox="794 1095 1487 1126">-</td> </tr> <tr> <td data-bbox="451 1126 794 1160">eResources addresses</td> <td colspan="2" data-bbox="794 1126 1487 1160"></td> </tr> </tbody> </table>			Basic literature	-		Supplementary literature	-		eResources addresses					
Basic literature	-														
Supplementary literature	-														
eResources addresses															
Example issues/ example questions/ tasks being completed	<p>Explanation of the principle of operation using coupled booms?</p> <p>What are the basic loading systems for tankers?</p> <p>Describe a selected method used for dredging waterways.</p> <p>What is the function of a tensioner on a unit for laying submarine pipelines?</p>														
Practical activities within the subject	Not applicable														

Document generated electronically. Does not require a seal or signature.