



Subject card

Subject name and code	Structure of Ship Devices, PG_00056424						
Field of study	Ocean Engineering						
Date of commencement of studies	October 2021		Academic year of realisation of subject		2023/2024		
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		3.0		
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 inż. Jacek Nakielski				
	Teachers		dr inż. Jacek Nakielski				
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	0.0	30.0	0.0	45
	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	45		4.0		26.0	75
Subject objectives	To acquaint students with the principle and process of designing ship equipment.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[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		The student is able to choose the appropriate tools to perform a project task.		[SW3] Assessment of knowledge contained in written work and projects		
	[K6_U03] can use computer-aided design, production and operation tools for ocean technology objects and systems		The student is able to support the design process with computer tools.		[SU1] Assessment of task fulfilment [SU4] Assessment of ability to use methods and tools		
	[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		Based on the guidelines, the student is able to formulate limitations and design needs.		[SU2] Assessment of ability to analyse information [SU3] Assessment of ability to use knowledge gained from the subject [SU5] Assessment of ability to present the results of task		
	[K6_W05] has an organized knowledge on design, construction and operation of ocean technology objects and systems		The student knows the principles and guidelines of designing marine equipment.		[SW1] Assessment of factual knowledge		
Subject contents	Equipments of the line s shaft: clutch, gears, shafts, bearings. Controllable pitch propeler: to determine the basic parameters, types of mechanisms, under pressure to bring oil, servo system. Construction winches: drum, stacker lines, brake, hydraulic systems. Handling equipment: cranes and overhead cranes, cargo handling systems for liquid and bulk. Ramps and gates: to determine the basic parameters, types and structures. Basic ship s systems and installations: ballast, bilge, fire. Technological equipment of the special vessels:dredging vessels floating cranes, off-shore platforms, drillships, pipe-lying vessels, cable layers. Deep-water anchorage and dynamic positioning.						

Prerequisites and co-requisites	1.Fundamentals of Machine design		
	2.Fundamentals of ship equipment		
	3. Strength of materials		
	4. Mechanics		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Midterm colloquium	50.0%	50.0%
	Practical exercise	50.0%	50.0%
Recommended reading	Basic literature	1.Dietrich M. i inni: Podstawy konstrukcji maszyn . WNT 1999 2.Szala J.: Napędy Mechaniczne - materiały z podstaw konstrukcji maszyn. Wydawnictwo ATR - Bydgoszcz 1997 3.Stryczek S.: Napęd hydrostatyczny. Wydawnictwo Naukowo- Techniczne Warszawa 1999 4.Pawlicki K.: Elementy d wignic. PWN, Warszawa, 1982 5.Wojtaszczyk B.: Urządzenia przeładunkowe drobnicowców. Wydawnictwo Morskie, 1988. 6.Pałuch K., Puchalski J., liwiński A.: Statki poziomego ładowania. Trademar, Gdynia 1996. 7.Perepeczko A.: Okrętowe urządzenia sterowe. Wydawnictwo Morskie Gdańsk 1983 8.Dymarski Cz.: Okrętowe ruby nastawne konstrukcja i sterowanie. Wydawnictwo Politechniki Gdańskiej, Gdańsk 2009. 9.Lisowski J., Galbas J., Krajczyński Z.: Okrętowe stery strumieniowe. Wydawnictwo Morskie Gdańsk	
	Supplementary literature	Websites	
	eResources addresses	Adresy na platformie eNauczanie:	
Example issues/ example questions/ tasks being completed	1. Preparation of design assumptions and performance of strength calculations for the main components of the deck crane. 2. Preparation of design assumptions and execution of strength calculations for the main elements of the mooring winch.		
Work placement	Not applicable		