GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Structure of Ship Devices, PG_00045112		
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	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	6.0	24.0	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_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
[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

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.

<table>
<tr><td>Prerequisites and co-requisites</td><td>1.Fundamentals of Machine design

2.Fundamentals of ship equipment

3. Strength of materials

4. Mechanics</td></tr>
<tr><td>Assessment methods and criteria</td><td>
<table>
<tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr>
<tr><td>Practical exercise</td><td>50.0%</td><td>50.0%</td></tr>
<tr><td>Midterm colloquium</td><td>50.0%</td><td>50.0%</td></tr>
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<tr><td>Recommended reading</td><td>
<table>
<tr><td>Basic literature</td><td>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.: Urzšdzenia przeładunkowe drobnicowców. Wydawnictwo Morskie, 1988. 6.Pałuch K., Puchalski J., liwiński A.: Statki poziomego ładowania. Trademar, Gdynia 1996. 7.Perepeczko A.: Okrętowe urzšdzenia 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</td></tr>
<tr><td>Supplementary literature</td><td>Websites</td></tr>
<tr><td>eResources addresses</td><td>Adresy na platformie eNauczanie:</td></tr>
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<tr><td>Example issues/ example questions/ tasks being completed</td><td>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.</td></tr>
<tr><td>Work placement</td><td>Not applicable</td></tr>
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