

GDAŃSK UNIVERSITY

Subject card

Subject name and code	Ship Power Plants, PG_00045065								
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			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	5		ECTS credits			2.0			
Learning profile	general academic profile		Assessment form			assessment			
Conducting unit	Faculty of Ocean Engineering and Ship Technology								
Name and surname	Subject supervisor dr inż. Jacek Rudnicki								
of lecturer (lecturers)	Teachers								
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project Semina		Seminar	SUM	
	Number of study hours	30.0	0.0	0.0	0.0		0.0	30	
	E-learning hours included: 0.0								
Learning activity and number of study hours	Learning activity	Participation in classes includ plan	n didactic ed in study	Participation in consultation hours		Self-study		SUM	
	Number of study hours	30	3.0			17.0		50	
Subject objectives	Structural solutions of various types ships power plants. Stages of marine power plant design								
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		He explains the functioning the basic elements of the marine propulsion system. He describes the process of co-operation among the engine - hulk - propeller. He uses coefficients characterizing the marine power plant.			[Sw1] Assessment of factual knowledge			
	[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		He defines indexes of ships energetic system's appraisal. Explains and analyses all dependences concerning power and efficiency in plant's energetic systems. He links the knowledge from mechanics and thermodynamics to identify energetic processes realized in machines and devices of marine power plant.			[SU2] Assessment of ability to analyse information [SU3] Assessment of ability to use knowledge gained from the subject			
	[K6_W08] has knowledge of the principles of sustainable development		Student classifies and defines the scope of usage of marine power plant's different types.			[SW1] Assessment of factual knowledge			
Subject contents	LECTURE Classification and the scope of different marine power plants usage. Scheme of power and efficiency in plants energetic system, appraisals indexes. Power transmission systems elements. Propellers characteristics, selection. Main propulsion engines types, characteristics, selection, structural and energetic indicators. Ships power transmission systems selection. Cooperation of engine and screw during seagoing in various conditions.								
Prerequisites and co-requisites	brak								
Assessment methods	Subject passin	Passing threshold			Percentage of the final grade				
and criteria	Midterm colloquium	60.0%			100.0%				

Recommended reading	Basic literature	 Balcerski A.: Siłownie okrętowe. Skrypt Politechniki Gdańskiej 1990. Cudny K.: Linie wałów okrętowych. Wyd. Morskie, Gdańsk 1990. 3. Basic Principles of Ship Propulsion. MAN Diesel & Turbo. www.manbw.com, Copenhagen, 2006. 3. Urbański P.: Podstawy napędu statku. Fundacja rozwoju AM Gdynia 2005. 4. Wojnowski W.: Okrętowe siłownie spalinowe. Skrypt AMW 2002. 5. Woud H.K., Stapersma D.: Design of propulsion and electric power generation systems IMAREST London 2002 				
	Supplementary literature	1. Urbański P.: Gospodarka energetyczna na statkach. Wyd. Morskie, Gdańsk 1978. 2. Wyd. zb.: Poradnik okrętowca. Wyd. Morskie, Gdynia 1960. 3. Przepisy klasyfikacji i budowy statków morskich. PRS, Gdańsk 2004.				
	eResources addresses	Adresy na platformie eNauczanie:				
Example issues/ example questions/ tasks being completed	Tasks and classification of marine power gym.					
	The structure of the ship's main power system.					
	The drive unit - Drive System					
	The power transmission systems in the main propulsion system of the ship - classification, basic elements of their structure and function.					
	Structural indexes of ship power plants - definition, interpretation.					
	Diagram of power and efficiency in the main power system of the ship.					
	The efficiency of the ship power plant - performance indicators, definition, interpretation.					
	Disposal of waste energy in marine power plants.					
Work placement	Not applicable					