



Subject card

Subject name and code	, PG_00056287						
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	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 of lecturer (lecturers)	Subject supervisor		dr inż. Jacek Rudnicki				
	Teachers						
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	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 didactic classes included in study plan		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_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		
	[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_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		
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 and criteria	Subject passing criteria		Passing threshold		Percentage of the final grade		
	Midterm colloquium		60.0%		100.0%		

Recommended reading	Basic literature	1. Balcerski A.: Siłownie okrętowe. Skrypt Politechniki Gdańskiej 1990. 2. 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	<p>Tasks and classification of marine power gym.</p> <p>The structure of the ship's main power system.</p> <p>The drive unit - Drive System</p> <p>The power transmission systems in the main propulsion system of the ship - classification, basic elements of their structure and function.</p> <p>Structural indexes of ship power plants - definition, interpretation.</p> <p>Diagram of power and efficiency in the main power system of the ship.</p> <p>The efficiency of the ship power plant - performance indicators, definition, interpretation.</p> <p>Disposal of waste energy in marine power plants.</p>	
Work placement	Not applicable	