GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Technical, Economical and Ecological aspects of Ship propulsion, PG_00056208		
Field of study	Transport and Logistics		
Date of commencement of studies	October 2022	Academic year of realisation of subject	2024/2025
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	5	ECTS credits	2.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Zakład Siłowni Okrętowych -> Institute of Ocean Engineering and Ship Technology -> Faculty of Mechanical Engineering and Ship Technology		
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Piotr Bzura	
	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

To teach the basic principles of operation and maintenance of engine room systems

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 means and systems of transport	A student is able to evaluate the efficiencies of different ship propulsion system	[SW2] Assessment of knowledge contained in presentation
[K6_W08] has knowledge regarding the principles of sustainable development	A student is able to evaluate the engine's exhaust emissions	[SW2] Assessment of knowledge contained in presentation
[K6_W05] has an organized knowledge on design, construction and operation of means and systems of transport	A student is able to find the relationship between the efficiency of ship's propusion system and its economy and ecological impact	[SW2] Assessment of knowledge contained in presentation

Subject contents

Lecture: Operation of ship equipment and power systems (main propulsion, generator sets, and boilers). Handling of ship equipment and power systems (main propulsion, generator sets, and boilers). Operability of ship equipment. Mathematical models of the operation processes of ship equipment. Control of the operation process of ship equipment. Basics of logistics in the operation of ship power plants and equipment. Management of ship power plant operations. Operation of cargo handling equipment.

Prerequisites and co-requisites

Knowledge from the subjects: energy systems in transportation, vehicle engines, fundamentals of machinery and equipment operation.

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
Qualiffying test	51.0%	100.0%

Recommended reading

Basic literature	Biernat J., Girtler J: Techniczna eksploatacja okrętów. Skrypt WSMW, Gdynia 1983 r. Niziński S.: Eksploatacja obiektów technicznych, Biblioteka problemów eksploatacji, Radom 2002 r. Włodarski J.K.: Podstawy eksploatacji maszyn okrętowych, Akademia Morska, Gdynia 2006 r.
Supplementary literature	Balcerski A.: Siłownie okrętowe. Skrypt Politechniki Gdańskiej 1990. Górski Z., Perepeczko A.: Okrętowe maszyny i urządzenia pomocnicze. Wyd. TRADEMAR 1998. Wojnowski W.: Siłownie okrętowe. Cz I, II i III. AMW Gdynia 1999 rok.
eResources addresses	Adresy na platformie eNauczanie:

Example issues/ example questions/ tasks being completed	1. Main Energy Systems of a Ship's Power Plant - Classification, Functions 2. Indicators for Comprehensive Assessment of a Ship's Power Plant - Construction and Operational 3. Overall Propulsion Efficiency vs. Overall Energy Efficiency - Interpretation 4. Typical Propulsion System Solutions on Transport Ships 5. Basic Stages of Servicing the Main Propulsion System 6. Technical Maintenance System of Power Plants - Classification Supervision
Work placement	Not applicable