GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Thermodynamic Fundamentals of Ship Power Plant, PG_00060557		
Field of study	Naval Architecture and Offshore Structures		
Date of commencement of studies	October 2026	Academic year of realisation of subject	2027/2028
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	2	Language of instruction	Polish
Semester of study	4	ECTS credits	6.0
Learning profile	general academic profile	Assessment form	exam
Conducting unit	Institute of Naval Architecture -> Faculty of Mechanical Engineering and Ship Technology -> Faculties of Gdańsk University of Technology		
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Damian Bocheński	
	Teachers		

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	15.0	15.0	15.0	0.0	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	5.0	100.0	150

Subject objectives

Acquainting students with thermodynamic issues in a ship power plant (fuel combustion, heat transfer, wet gases)

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_W03] has knowledge of hydromechanics, thermodynamics, machine design, ecology, materials science necessary to understand the principles of construction and operation of ocean engineering facilities and equipment	The student applies the knowledge of thermodynamics to solve technical problems. Recognizes the basic concepts of terminology used in thermodynamics. It presents energy transformations in work and entropic systems. Analyzes combustion processes of various fuels. Performs calculations on heat transfer, moist gases (has the basis for designing air-conditioning and ventilation systems).	[SW1] Assessment of factual knowledge
[K6_K02] can work in a team, assuming various roles, can act in a rational and ethical way	The student, working in a team, solves tasks and conducts laboratory exercises in thermodynamics	[SK2] Assessment of progress of work [SK3] Assessment of ability to organize work

Subject contents

Course content – lecture
Theoretical cycles of internal combustion engines, fuel combustion processes, selection of the type of fuel, heat transfer (heat transfer, conduction and convection), selection of heat exchangers, moist gases (air, exhaust fuels).

Prerequisites and co-requisites

Knowledge from the subject of Thermodynamics

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
completion of laboratory exercises	100.0%	25.0%
colloquium on exercises	60.0%	25.0%
colloquium lecture	60.0%	50.0%

Recommended reading	Basic literature	Pudlik W .: Thermodynamics PG script (in Polish) Pudlik W .: Heat transfer PG script (in Polish)
	Supplementary literature	Internet
	eResources addresses	
Example issues/ example questions/ tasks being completed		
Practical activites within the subject	Not applicable	

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