



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 2024	Academic year of realisation of subject			2025/2026		
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 Ocean Engineering and Ship Technology -> Faculty of Mechanical Engineering and Ship Technology						
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Damian Bocheński					
	Teachers						
Lesson types and methods of instruction	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	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	Adresy na platformie eNauczanie:
Example issues/ example questions/ tasks being completed		
Work placement	Not applicable	