



Subject card

Subject name and code	Displacement Compressors, PG_00039977						
Field of study	Mechanical Engineering, Mechanical 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	6		ECTS credits		2.0		
Learning profile	general academic profile		Assessment form		assessment		
Conducting unit	Institute of Energy -> Faculty of Mechanical Engineering and Ship Technology						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. inż. Zbigniew Kneba				
	Teachers		mgr inż. Stanisław Gluch				
			dr hab. inż. Zbigniew Kneba				
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	15.0	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		5.0		15.0	50
Subject objectives	Acquainting students with thermodynamic processes and energetic parameters of displacement compressors. Overview of construction details of reciprocating and rotary compressors. Demonstration of compressor testing methods. Presentation of formulas for calculating compressor valves.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K6_U07] is able to design a typical construction of a mechanical device, component or a testing station using appropriate methods and tools, adhering to the set usage criteria		Understands the processes taking place in displacement compressors and knows their structures		[SU3] Assessment of ability to use knowledge gained from the subject		
	[K6_W08] possesses basic knowledge including the methodology of designing machine parts, mechanical devices, selection of construction materials, manufacturing and operation, with the lifetime cycle		Selects a compressor for industrial applications. Selects accessories for compressors.		[SW1] Assessment of factual knowledge		
Subject contents	Application areas of displacement compressors. Thermodynamic cycles and energy indicators of compressors. Perfect and real compressor. Construction of various types of reciprocating and rotary compressors. Compressor parts and their design calculations. Cooling and lubrication circuits. Compressor acceptance tests.						
Prerequisites and co-requisites	Completed thermodynamics classes.						
Assessment methods and criteria	Subject passing criteria		Passing threshold		Percentage of the final grade		
	written test, lab report		50.0%		100.0%		
Recommended reading	Basic literature		.				
	Supplementary literature		.				
	eResources addresses		Adresy na platformie eNauczanie:				
Example issues/ example questions/ tasks being completed	Draw an indicator diagram of the real compressor indicating the energy loss fields in relation to the ideal compressor.						

Work placement	Not applicable
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