



## Subject card

Subject name and code	Heat Turbomachinery, PG_00042103						
Field of study	Power Engineering, Power Engineering						
Date of commencement of studies	October 2021	Academic year of realisation of subject				2023/2024	
Education level	first-cycle studies	Subject group				Obligatory subject group in the field of study 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				English	
Semester of study	5	ECTS credits				4.0	
Learning profile	general academic profile	Assessment form				exam	
Conducting unit	Department of Energy and Industrial Apparatus -> Faculty of Mechanical Engineering and Ship Technology						
Name and surname of lecturer (lecturers)	Subject supervisor		prof. dr hab. inż. Krzysztof Kosowski				
	Teachers						
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	0.0	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	7.0		48.0		100
Subject objectives	Basic knowledge of turbomachinery principle of operation and turbomachinery energy power plants.						
Learning outcomes	Course outcome		Subject outcome			Method of verification	
	[K6_W09] knows the dangers of electrical devices and the principles of protection against them, has basic knowledge of heat exchangers, has basic knowledge of power equipment such as pumps, compressors, turbines, combustion engines, boilers, pipelines and their accessories and methods of their selection depending on the needs						
	[K6_W02] has a basic knowledge of physics (including optics, electricity and magnetism), chemistry, technical thermodynamics, fluid mechanics and general mechanics needed to understand and describe the basic phenomena occurring in devices and systems, energy plants and transmission networks and their environment						
	[K6_U07] is able to use basic knowledge of fluid flow machines and methods related to their design in an analytical and numerical approach to the preliminary design of an energy installation						
Subject contents	Basics of thermodynamical cycles. Elements of turbine power plants. Fluid problems in turbomachinery. Theory of turbine stages. Turbine flow parts.						
Prerequisites and co-requisites	Basics of mechanics, fluid mechanics and thermodynamics.						
Assessment methods and criteria	Subject passing criteria		Passing threshold			Percentage of the final grade	
	Written exam		60.0%			100.0%	

Recommended reading	Basic literature	Perycz S., Turbiny parowe i gazowe, IMP Ossolineum,  Kosowski K. ed., Steam and Gas Turbines, Alstom, ISBN 978-83-925959-3-9, 2007
	Supplementary literature	-
	eResources addresses	
Example issues/ example questions/ tasks being completed		
Work placement	Not applicable	