



## Subject card

Subject name and code	, PG_00056107						
Field of study	Mechatronics						
Date of commencement of studies	October 2024	Academic year of realisation of subject			2026/2027		
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	Division of Fluid-Flow Machinery -> Institute of Energy -> Faculty of Mechanical Engineering and Ship Technology -> Faculties of Gdańsk University of Technology						
Name and surname of lecturer (lecturers)	Subject supervisor	prof. dr hab. inż. Krzysztof Kosowski					
	Teachers						
Lesson types	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	0.0	0.0	30		
Subject objectives	To give fundamentals of turbomachinery (steam and gas turbines, compressors).						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
Subject contents	Course content – lecture Thermodynamic cycles of steam turbines, thermodynamic cycles of gas turbines, combined turbine cycles, elements of steam and gas turbine plants, axial turbine stage theory, stage losses and stage efficiency characteristics, multi-stage turbines, principles of radial and axial compressors, characteristics of compressors. Water turbines, principle of operation, the main characteristics. Air turbines, theory and design. Pumps, principle of operation, types and the main parameters.						
Prerequisites and co-requisites	fundamental knowledge of thermodynamics and fluid flow dynamics						
Assessment methods and criteria	Subject passing criteria		Passing threshold		Percentage of the final grade		
	exam		60.0%		100.0%		
Recommended reading	Basic literature		1. Perycz S., Turbiny parowe i gazowe, IMP- Ossolineum. 2. Kosowski K. et al, Steam and Gas Turbines, Alstom 3. Troskoleński A. T., Pompy wirowe, WNT				
	Supplementary literature		Lecture materials				
	eResources addresses						
Example issues/ example questions/ tasks being completed	<ol style="list-style-type: none"> <li>The main parameters of steam turbine cycle</li> <li>The main design parameters of gas turbine power plants</li> <li>Turbine stages - principle of operation</li> <li>The main design parameters of turbine stages</li> <li>Flows in nozzles</li> <li>Multistage tubines</li> </ol>						

Practical activities within the subject	Not applicable
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