



## Subject card

Subject name and code	, PG_00056117						
Field of study	Mechatronics						
Date of commencement of studies	October 2021	Academic year of realisation of subject			2023/2024		
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	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 inż. Wojciech Włodarski					
	Teachers	dr inż. Wojciech Włodarski					
Lesson types and methods of instruction	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	The aim of the course is to broaden the knowledge of the construction, operation and control of flow machines used in the power industry.						
Learning outcomes	Course outcome	Subject outcome			Method of verification		
	[K6_U05] is able to use properly chosen tools to compare design solutions of elements and mechatronics systems according to given application and economic criterions (e.g. power demand, speed, costs)	The student has in-depth knowledge of the operation of complex mechanical systems and devices.			[SU1] Assessment of task fulfilment		
	[K6_U06] is able to identify and formulate specification of simple, practical engineering tasks, distinctive for mechatronics	The student has in-depth knowledge of the operation of complex mechanical systems and devices.			[SU2] Assessment of ability to analyse information		
	[K6_W08] knows and understands design and production processes of elements and simple mechatronic devices	The student is able to describe and evaluate system and non-technical aspects when solving engineering tasks in the field of design, technology and operation of machines.			[SW1] Assessment of factual knowledge		
	[K6_W10] has a basic knowledge about development trends in terms of engineering and technical sciences and scientific disciplines: Mechanical Engineering, Automation, Electronics and Electrical Engineering, adequate for Mechatronics course	The student has in-depth knowledge of the operation of complex mechanical systems and devices.			[SW1] Assessment of factual knowledge		
Subject contents	classification of flow energy machines, control of steam and gas turbines, wind turbines, pumps and compressors						
Prerequisites and co-requisites	basics of thermodynamics and fluid mechanics						
Assessment methods and criteria	Subject passing criteria	Passing threshold			Percentage of the final grade		
	test	51.0%			100.0%		
Recommended reading	Basic literature	Krzysztof Kosowski Steam and gas turbines Alstom 2007					

	Supplementary literature	Krzysztof Kosowski Steam and gas turbines Alstom 2007
	eResources addresses	Adresy na platformie eNauzanie: Układy regulacji maszyn energetycznych, W, sem. 6, letni 23/24, PG_00056117 - Moodle ID: 38156 <a href="https://enauzanie.pg.edu.pl/moodle/course/view.php?id=38156">https://enauzanie.pg.edu.pl/moodle/course/view.php?id=38156</a>
Example issues/ example questions/ tasks being completed	Steam turbine control methods	
Work placement	Not applicable	