



Subject card

Subject name and code	Steam and Gas Turbines Constuction (WOiO), PG_00042090						
Field of study	Power Engineering, Power Engineering, Power Engineering, Power Engineering, Power Engineering						
Date of commencement of studies	October 2020	Academic year of realisation of subject			2022/2023		
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			English		
Semester of study	6	ECTS credits			4.0		
Learning profile	general academic profile	Assessment form			assessment		
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. Jerzy Głuch				
	Teachers		dr hab. inż. Jerzy Głuch				
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	0.0	0.0	15.0	30
	E-learning hours included: 0.0 Address on the e-learning platform: https://enauczanie.pg.edu.pl/moodle/						
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		65.0		100
Subject objectives	Gaining basic knowledge in thermal turbomachinery design						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	K6_U01		Student can design thermal turbine		[SU1] Assessment of task fulfilment [SU3] Assessment of ability to use knowledge gained from the subject [SU4] Assessment of ability to use methods and tools		
	K6_U05		Student can design energetical objects on the base of balance calculation		[SU2] Assessment of ability to analyse information [SU3] Assessment of ability to use knowledge gained from the subject [SU4] Assessment of ability to use methods and tools		
	K6_W06		Student can evaluate energetical object taking into account diagnostics and reliability		[SW3] Assessment of knowledge contained in written work and projects		
Subject contents	Rotor design. Stress analysis of drum and disc rotors. Trigger rotations of folding disc rotors. Rotor balancing. Design of statordiscs. Stress analysis of statordiscs. Design of rotary blades and their mounts. Vibration of the blades. Basics of rotor dynamics. Turbine bodies and external glands. Design of radial and thrust bearings.						
Prerequisites and co-requisites	basic knowledge on termal turbomachinery cycles						
Assessment methods and criteria	Subject passing criteria		Passing threshold		Percentage of the final grade		
	seminary		100.0%		50.0%		
	lecture		60.0%		50.0%		

Recommended reading	Basic literature	<p>Perycz S., Turbiny parowe i gazowe, Politechnika Gdańska, Skrypt, Gdańsk 1988</p> <p>Perycz S., Turbiny parowe i gazowe, Maszyny Przepływowe T. 10, Wydawnictwo Instytutu Maszyn Przepływowych PAN, Gdańsk 1992.</p> <p>Allen Bursley Heat Engines Steam, Gas, Steam Turbines and their Auxiliaries</p> <p>James Ambrose Moyer The Steam Turbine A Practical and Theoretical Treatise for Engineers and Designers, Including a Discussion of the Gas Turbine</p> <p>Cohn H Rogers Gas Turbine Theory</p> <p>Salisbury J K Steam Turbines and their Cycles</p>
	Supplementary literature	Kosowski K, Introduction to the theory of marine turbines, Wyd. PG Delft University, Gdańsk 2004
	eResources addresses	<p>Adresy na platformie eNauczenie:</p> <p>Mechanika płynów - Moodle ID: 29007</p> <p>https://enauczenie.pg.edu.pl/moodle/course/view.php?id=29007</p>
Example issues/ example questions/ tasks being completed	Descibe Gruber's method	
Work placement	Not applicable	