



Subject card

Subject name and code	Term Project, PG_00042137						
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			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			4.0		
Learning profile	general academic profile	Assessment form			assessment		
Conducting unit	Department of Energy and Industrial Apparatus -> Faculty of Mechanical Engineering and Ship Technology						
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Wojciech Włodarski					
	Teachers	dr inż. Wojciech Włodarski dr hab. inż. Marian Piwowarski					
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	0.0	0.0	30.0	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	3.0		67.0	100	
Subject objectives	The practical use of knowledge of the design and construction of turbomachinery.						
Learning outcomes	Course outcome	Subject outcome			Method of verification		
	K6_U01	The student assesses the usefulness and correctly selects the methods and tools best suited to solving engineering tasks typical for the specialization.			[SU1] Assessment of task fulfilment		
	K6_U02	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.			[SU2] Assessment of ability to analyse information		
Subject contents	Gas or steam turbine project. Calculation of thermodynamic cycle. Calculation of the main design parameters of the turbine flow. Preliminary calculation of the flow of gas turbine or steam turbine. Calculations detailed flow and strength of the selected turbine stage. Drawings of selected parts of the designed turbine.						
Prerequisites and co-requisites	Knowledge items: thermodynamics, turbomachinery, technical drawing.						
Assessment methods and criteria	Subject passing criteria	Passing threshold			Percentage of the final grade		
	project	60.0%			100.0%		

Recommended reading	Basic literature	<p>1. Kosowski K. et al "Steam and Gas Turbines Power Plants" Alstom, France-Switzerland-United Kingdom-Poland, 2007;</p> <p>2. Leizerovich A. S. "Steam Turbines for Modern Fossil-fuel Power Plants" Inc NetLibrary, 2007;</p> <p>3. Logan E., Ro R. "Handbook of Turbomachinery" Arizona State University, Marcel Dekker Inc. New York, Basel, 2003;</p>
	Supplementary literature	<p>1. Giampaolo T. "Gas Turbine Handbook: Principles and Practices 3rd Edition, Fairmont Press, 2006;</p> <p>2. Woodyard D. "Pounder s Marine Diesel Engines and Gas Turbines Elsevier Butterworth-Heinemann, 2004;</p> <p>3. Boyce M. P. "Gas Turbine Engineering Handbook Gulf Professional Publishing an imprint of ButterworthHeinemann, Boston, Oxford, Auckland, Johannesburg, Melbourne, New Delhi, 2002;</p> <p>4. Horlock J. H. "Advanced Gas Turbine Cycles An imprint of Elsevier Science, Amsterdam, Boston, Heidelberg, London, New York, Oxford, Paris, San Diego, San Francisco, Singapore, Sydney, Tokyo, 2003;</p>
	eResources addresses	<p>Adresy na platformie eNauczenie:</p> <p>Praca przejściowa, P, Energetyka, sem. 6, letni 22/23 - Moodle ID: 29727</p> <p>https://enauczenie.pg.edu.pl/moodle/course/view.php?id=29727</p>
Example issues/ example questions/ tasks being completed	selection of the blade profile of a steam turbine rotor	
Work placement	Not applicable	