

§ GDAŃSK UNIVERSITY § OF TECHNOLOGY

Subject card

Subject name and code	Measurements Techniques in Power Engineering, PG_00042140								
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			2.0			
Learning profile	general academic profile		Assessment form			assessment			
Conducting unit	Institute of Energy -> Faculty of Mechanical Engineering and Ship Technol				ology				
Name and surname	Subject supervisor	dr inż. Marzena Banaszek							
of lecturer (lecturers)	Teachers	dr inż. Marzena Banaszek							
	dr inż Wojciech Włodarski								
		dr bab, int Michal Klugmann							
			ur nad. Inz. Michał Kiugmann						
	dr hab. inż. Jacek Barański								
Lesson types and methods	Lesson type	Lecture	Tutorial	Laboratory	Projec	t	Seminar	SUM	
of instruction	Number of study hours	15.0	0.0	15.0	0.0		0.0	30	
	E-learning hours included: 0.0								
Learning activity and number of study hours	Learning activity	Participation in classes includ plan	n didactic ed in study	lidactic Participation in l in study consultation hours		Self-study		SUM	
	Number of study hours	nber of study 30 Irs		3.0		17.0		50	
Subject objectives	Understanding the principles of measuring characteristic quantities in the processes of using heat for performing mechanical work, generating electricity, maintaining thermal comfort								
Learning outcomes	Course out	Subject outcome			Method of verification				
	K6_U03		The student takes measurements characteristic values in heat transfer processes and mass, flow, production electricity, maintenance thermal comfort						
	K6_W06		Student describes the principles of measurements characteristic values in heat utilization processes to do the job mechanical, manufacturing electricity, maintenance thermal comfort						
Subject contents	Basics of the theory of errors including the concept of uncertainty, contemporary patterns and etalons electric, classic measuring instruments and systems. Measurement methods and interpretation of measurement results physico-chemical in power plants and heating plants, measurements of air emissions, control of water intake and sewage discharge, metering for system balancing. Analysis of water-steam cycles in power plants and combined heat and power plants. Heating circuits. Types of analyzes in the water-steam cycle. Laboratory classes: Analysis of water-steam cycles in power plants. Circuits heating. Types of analyzes in the water-steam cycle. Departure laboratory:								
Prerequisites and co-requisites	Physics, Thermodynamics								
Assessment methods and criteria	Subject passing criteria		Passing threshold			Percentage of the final grade			
	Written test		56.0%			75.0%			
	Laboratory test		56.0%			25.0%			

Recommended reading	Basic literature	1. J. Szargut, A. Ziębik: Podstawy energetyki cieplnej. PWN, W-wa 1998 2. Wyd. zbiorowe: Pomiary cieplne cz.l i II. WNT, 1995 3. T.H. Fransson: Measuring techniques in thermal engineering. RIT, Sztokholm 2002 4. Wyd. zbiorowe: Optical methods for data processing in heat and fluid flow. PEP, Londyn 2002				
	Supplementary literature	T.H. Fransson: Measuring techniques in thermal engineering. RIT, Sztokholm 2002				
	eResources addresses	Adresy na platformie eNauczanie:				
		Techniki pomiarowe w energetyce, W/L, E, sem.6, letni 22/23 (PG_00042140) - Moodle ID: 29457 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=29457				
Example issues/ example questions/ tasks being completed						
Work placement	Not applicable					