



Subject card

Subject name and code	Electric Power Generation Technology, PG_00038432						
Field of study	Electrical Engineering						
Date of commencement of studies	October 2023		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	1		Language of instruction		Polish		
Semester of study	2		ECTS credits		2.0		
Learning profile	general academic profile		Assessment form		assessment		
Conducting unit	Department of Electrical Power Engineering -> Faculty of Electrical and Control Engineering						
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. Andrzej Augusiak				
	Teachers		dr inż. Andrzej Augusiak				
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		2.0		18.0	50
Subject objectives	Acquiring knowledge of main energy conversion technologies and their practical implementation in fundamental types of power plants.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	K6_U06		can discuss the importance of energy generation in the modern world		[SU2] Assessment of ability to analyse information		
	K6_W09		is able to discuss the main technologies of electricity production and discuss their most important features, including energy efficiency		[SW1] Assessment of factual knowledge		
Subject contents	Types and forms of primary energy, energy conversion processes and their efficiency, chains of energy conversion processes in power plants, efficiency of power plants and its components, gross and net efficiency of power plants, thermodynamic cycles in thermal power plants, Carnot cycle and its energy conversion efficiency, means of increase of energy conversion efficiency in thermal power plants, influence of fossil fuel energy use on environment, power plants using Renewable Energy Sources, construction and principle of work in hydro- and wind power plants, nuclear power plants - construction and principle of work of PWR-type power plants, cooperation of power plants with power system						
Prerequisites and co-requisites							
Assessment methods and criteria	Subject passing criteria		Passing threshold		Percentage of the final grade		
	Midterm colloquium		50.0%		100.0%		
Recommended reading	Basic literature		1. Marecki J.: Podstawy przemian energetycznych. WNT, Warszawa 2007				
			2. Chmielniak T.: Technologie energetyczne. WNT, Warszawa 2008				
	Supplementary literature		3. Pawlik M., Strzelczyk F.: Elektrownie. WNT, Warszawa 2009				
	eResources addresses		Uzupełniające Adresy na platformie eNauczanie: TECHNOLOGIE WYTWARZANIA ENERGII ELEKTRYCZNEJ [2023/24] - Moodle ID: 28521 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=28521				

Example issues/ example questions/ tasks being completed	What is the value of energy efficiency in classic thermal plants? What parameters of the plants' technology do influence that value? Which of these parameters are of crucial importance? How can one improve that efficiency? What is the value of energy efficiency in other types of power plants (hydro, wind, nuclear)? Why?
Work placement	Not applicable