



## 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 <a href="https://enauzanie.pg.edu.pl/moodle/course/view.php?id=28521">https://enauzanie.pg.edu.pl/moodle/course/view.php?id=28521</a>				

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