GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Electric Power Generation Technology, PG_00038432		
Field of study	Electrical Engineering		
Date of commencement of studies	October 2024	Academic year of realisation of subject	2024/2025
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		

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_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
K6_U06	can discuss the importance of energy generation in the modern world	[SU2] Assessment of ability to analyse information

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:

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