GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Modern Sources of Electric Energy, PG_00038484		
Field of study	Electrical Engineering		
Date of commencement of studies	February 2025	Academic year of realisation of subject	2025/2026
Education level	second-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	1.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Department Of Electrical Power Engineering -> Faculty Of Electrical And Control Engineering -> Wydziały Politechniki Gdańskiej		
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Marcin Jaskólski	
	Teachers		

Lesson types and methods of instruction

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	15.0	0.0	0.0	0.0	0.0	15

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	15	2.0	8.0	25

Subject objectives

The purpose of the course is to provide information about modern energy sources.

Learning outcomes

Course outcome	Subject outcome	Method of verification

Subject contents

General data concerning the large part and importance of new energy sources for national power system. Different kinds of the sources especially the planed energy sources in Poland. Balancing principles of energy objects on the examples of: conventional steam power plants, especially the ultra supercritical plants and also these which are equiped with the hybrid systems with coal gasification and the boilers with fluidised bed combustion chamber and also with combined gas and steam blocks. Solutions of plants based on different kinds of nonconventional energy sources (geothermal, sea and ocean water energy). Calculations of technical and operating coefficients of above-mentioned sources. Importance of environmental protection problems.

Prerequisites and co-requisites

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
Knowledge test	60.0%	100.0%

Recommended reading

Basic literature

1. Kubowski J.: *Nowoczesne elektrownie jądrowe*. WNT, Warszawa 2010
2. Pawlik M., Strzelczyk F.: *Elektrownie*. WNT, Warszawa 2009
3. Chmielniak T.: *Technologie energetyczne*. WNT, Warszawa 2008

Supplementary literature

1. Praca zbiorowa: *Poradnik inżyniera elektryka. Tom III*. WNT, Warszawa 2007
2. Cieśliński J., Mikielewicz J.: *Niekonwencjonalne źródła energii*. Wydawnictwo Politechniki Gdańskiej, Gdańsk 1996
3. Szargut J., Ziębik A.: *Podstawy energetyki cieplnej*. WNP, Warszawa 2000
4. Lewandowski W.: *Proekologiczne odnawialne źródła energii*. WNT, Warszawa 2007.

eResources addresses

Adresy na platformie eNauczanie:

Example issues/ example questions/ tasks being completed

- What moisture content is accepted in steam turbine? What might be the effect of too low steam quality?
- Show feedwater heating on an h-s graph and a schematic diagram of turbine system.
- What is the role of mixing system in a biogas plant?
- What are the advantages and disadvantages of fuel cells?

Work placement

Not applicable

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