GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Economics and Management in Electrical Power Engineering, PG_00038482		
Field of study	Electrical Engineering		
Date of commencement of studies	February 2024	Academic year of realisation of subject	2024/2025
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		
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Paweł Bućko	
	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

Basic knowleges of technical-economics problems in power systems.

Learning outcomes

Course outcome	Subject outcome	Method of verification
K7_K03	The student is able to work in a group.	[SK1] Assessment of group work skills
K7_K02	The student is able to assess the impact of energy installations on the environment.	[SK5] Assessment of ability to solve problems that arise in practice

Subject contents

Periodic changes of demand in power systems. Typical daily, monthly and yearly demand curves. Demand coefficients and ratios. Economic implication of demand changes in the system. Losses in power system. Active and reactive power losses in power system elements. Energy losses. Methods for losses calculation. Costs of the losses. Losses minimization. Costs calculation in energy sector. Discount rate. Brief rules of costs discounting. Investments processes. Costs of capital. Amortization possible ways of calculation. Annual costs calculation. Fixed and production related costs. Costs minimization selected, typical problems related to energy sectors. Selected management problems in power sector.

Prerequisites and co-requisites

Brief knowledge of electrical engineering and power system

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. Górzyński J.: Audyting energetyczny. Fundacja Poszanowania Energii, Warszawa 1999.
2. Poradnik inżyniera elektryka pr. zbiorowa, WNT. Warszawa, 2000.
3. Paska J.: Ekonomika energetyki. PW, Warszawa, 2007.
4. Kamrat W.: Gospodarka energetyczna. PWN, Warszawa, 2023.

Supplementary literature

1. Warnecke H.J., Bullinger H.J., Hichert R., Voegele A.: Rachunek kosztów dla inżynierów. WNT. Warszawa 1993.
2. Siegel J.G., Shim J.K., Hartman S. W.: Przewodnik po finansach. Wydawnictwo Naukowe PWN, Warszawa 1995.

eResources addresses

Adresy na platformie eNauczanie:

Example issues/ example questions/ tasks being completed	1. Calculation of power losses in the transmission grid. 2. Analyse of daily load change. 3. Calculation of energy loses in the chosen transmission grid element.
Work placement	Not applicable