GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Economics and Management in Electrical Power Engineering, PG_00038356		
Field of study	Electrical Engineering		
Date of commencement of studies	October 2026	Academic year of realisation of subject	2026/2027
Education level	second-cycle studies	Subject group	
Mode of study	Part-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 -> Faculties of Gdańsk University of Technology		
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Paweł Bućko	
	Teachers		

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	10.0	0.0	0.0	0.0	0.0	10

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	10	2.0	13.0	25

Subject objectives

Knowleges of technical-economics problems in power systems.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K7_W08] has an extended knowledge of power supply systems power supply and control systems including the use of computer networks and design of these systems in industrial facilities industrial facilities	can indicate ways to minimize losses in the field of network electricity supply in power supply systems	[SW3] Assessment of knowledge contained in written work and projects
[K7_W03] has an extended and deepened knowledge of the field related to electrical power systems and electrical equipment	knows equivalent diagrams of transmission track elements and can indicate sources of losses in transmission systems; distinguishes between balance sheet, technical and commercial losses	[SW1] Assessment of factual knowledge
[K7_U11] is able to analyse the variability of electricity loads, calculate power and energy losses, can carry out cost accounting	is able to calculate power and energy losses in transmission systems and analyze the variability of power loads	[SU1] Assessment of task fulfilment

Subject contents

Course content – lecture

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.
	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	
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.	
Practical activites within the subject	Not applicable	

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