



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 2024	Academic year of realisation of subject			2024/2025		
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						
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Paweł Bućko					
	Teachers	dr hab. inż. Paweł Bućko					
Lesson types and methods of instruction	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_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_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_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	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.: Audytyng energetyczny. Fundacja Poszanowania Energii, Warszawa 1999. 2. Poradnik inżyniera elektryka pr. zbiorowa, WNT. Warszawa, 2000. 3. Paska J.: Ekonomia energetyki. PW, Warszawa, 2007.					

	Supplementary literature	<ol style="list-style-type: none"> 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	<p>Adresy na platformie eNauczenie:</p> <p>GOSPODARKA I ZARZĄDZANIE W ELEKTROENERGETYCE [ET] [Niestacjonarne][2024/25] - Moodle ID: 43417 https://enauczenie.pg.edu.pl/moodle/course/view.php?id=43417</p>
Example issues/ example questions/ tasks being completed	<ol style="list-style-type: none"> 1. Calculation of power losses in the transmission grid. 2. Analyse of daily load change. 3. Calculation of energy losses in the chosen transmission grid element. 	
Work placement	Not applicable	

Document generated electronically. Does not require a seal or signature.