



## Subject card

Subject name and code	Energy Economics, PG_00055971						
Field of study	Power Engineering						
Date of commencement of studies	October 2024	Academic year of realisation of subject			2027/2028		
Education level	first-cycle studies	Subject group			Optional subject group Subject group related to scientific research in the field of study		
Mode of study	Full-time studies	Mode of delivery			at the university		
Year of study	4	Language of instruction			Polish		
Semester of study	7	ECTS credits			1.0		
Learning profile	general academic profile	Assessment form			assessment		
Conducting unit	Faculty of Electrical and Control Engineering						
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	1.0		9.0	25	
Subject objectives	The goal of this course is to gain the knowledge on the profitability assessment of energy investments.						
Learning outcomes	Course outcome	Subject outcome			Method of verification		
	[K6_U05] is able to formulate and carry out energy balances in devices and energy systems, also perform an energy audit of a simple building object, is able to perform a preliminary profitability analysis of a planned energy investment	Student is capable of determining annual electricity production from power plant and CHP plant, and calculating the costs of production. Knows how to calculate fuel consumption to electricity production. Is able to perform economic analysis of the project of power plant.			[SU5] Assessment of ability to present the results of task [SU3] Assessment of ability to use knowledge gained from the subject [SU2] Assessment of ability to analyse information [SU1] Assessment of task fulfilment		
	[K6_W08] has basic knowledge in the field of intellectual property protection and patent law, knows and understands the basic processes of energy production and use, knows and understands the principles of modern heating and power systems	Student is capable of determining annual electricity production from power plant and CHP plant, and calculating the costs of production. Knows how to calculate fuel consumption to electricity production. Is able to perform economic analysis of the project of power plant.			[SW3] Assessment of knowledge contained in written work and projects [SW1] Assessment of factual knowledge		
	[K6_W07] knows the basics of economic calculus in the energy sector; knows the legal, organizational and economic principles of the functioning of energy markets, knows the basic principles of management and running a business	Student is capable of determining annual electricity production from power plant and CHP plant, and calculating the costs of production. Knows how to calculate fuel consumption to electricity production. Is able to perform economic analysis of the project of power plant.			[SW3] Assessment of knowledge contained in written work and projects [SW1] Assessment of factual knowledge		

Subject contents	<p>Money and the change of its value over time. Discounting. Capital recovery factor (CRF). Bank loans in business activity. Methods of amortisation (depreciation). Annual cost calculation in power engineering. Methods of evaluation of economic viability of investment projects in power engineering. Preliminary analysis of economic viability of investment for selected energy technology.</p>		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Preliminary analysis of investment project in power engineering	60.0%	50.0%
	Evaluation test	60.0%	50.0%
Recommended reading	Basic literature	<p>Marecki J.: Economics in Power Engineering. Electrical Engineer Handbook vol.3 Kamrat W.: Investing effectiveness evaluation methods in electric power engineering. Gdansk University of Technology Publishing. Gdansk 2004 Sobczyk M.: Financial mathematics. Publishing Agency. Warsaw 1995</p>	
	Supplementary literature	<p>Warnecke H.J., Bullinger H.J., Hichert R., Voegelé A.: Cost calculations for engineers. WNT. Warsaw 1993. Siegel J.G., Shim J.K., Hartman S. W.: Financial guide. PWN, Warsaw 1995.</p>	
	eResources addresses	Adresy na platformie eNauczenie:	
Example issues/ example questions/ tasks being completed	Assess the profitability of coal-fired power plant. Calculate NPV, IRR and DPBP.		
Work placement	Not applicable		