

SDAŃSK UNIVERSITY 的 OF TECHNOLOGY

Subject card

Subject name and code	Markets of Energy, PG_00042083								
Field of study	Power Engineering, Power Engineering, Power Engineering, Power Engineering, Power Engineering								
Date of commencement of studies	October 2020		Academic year of realisation of subject			2022/2023			
Education level	first-cycle studies		Subject group			Optional subject group			
Mode of study	Full-time studies		Mode of delivery			at the university			
Year of study	3		Language of instruction			English			
Semester of study	6		ECTS credits			2.0			
Learning profile	general academic profile		Assessment form			assessment			
Conducting unit	Department of Electri	cal Power Engi	neering -> Fac	eering -> Faculty of Electrical and Control Engineering					
Name and surname	Subject supervisor	dr inż. Marcin Jaskólski							
of lecturer (lecturers)	Teachers		prof. dr hab. inż. Waldemar Kamrat						
Lesson types and methods	Lesson type	Lecture	Tutorial	Laboratory	Projec	t	Seminar	SUM	
of instruction	Number of study	30.0	0.0	0.0	0.0		0.0	30	
	E-learning hours included: 0.0								
Learning activity and number of study hours	Learning activity	Participation in classes includ plan	n didactic ed in study	Participation in consultation hours		Self-study		SUM	
	Number of study hours	Number of study 30 nours		5.0		15.0		50	
Subject objectives	The aim of the course is to introduce students to the most important economic issues related to the creation and effective functioning of electricity markets and the challenges associated with the decarbonisation of the energy sector and recent innovations.								
Learning outcomes	Course out	come	Subject outcome			Method of verification			
	K6_U04		The student is able to present the rules of operation of the country's electricity market depending on degree of RES development.			[SU5] Assessment of ability to present the results of task			
	K6_W07		The student is able to apply the elements of calculus in the evaluation process of investments in the energy sector.			[SW3] Assessment of knowledge contained in written work and projects			
	K6_W06		The student is able to analyze energy technologies using various evaluation criteria.			[SW3] Assessment of knowledge contained in written work and projects			
Subject contents	Basic informations about the National Power System. Daily characteristics of the demand for electric energy. Centralized energy sources. Electricity production. Renewable energy in Europe and in the world. Tasks and requirements for centralized and regional energy supply systems. Choosing a route and running power grids. Ways of laying networks. The history of the energy market, its current state and prospects. Operators of the distribution network market in Poland. The next day market. Futures contracts.								
Prerequisites and co-requisites	Basic knowledge of physics (basic physical laws, physical quantities, their units and titres, mechanics, electrical engineering, thermodynamics, heat transfer). Knowledge of the properties of energy transformation: the efficiency of transformation and the cycle of transformations and thermodynamic cycles. Basic knowledge in mathematics: algebra, geometry and trigonometry, differential and integral calculus.								
Assessment methods	Subject passing criteria		Passing threshold		Percentage of the final grade				
and criteria	Report		60.0%		100.0%				
Recommended reading	Basic literature Energy Markets, W. Mielczarski et. al., Proceedings of Energy Market Conference, 2018 The Efficient Use of Energy and Environment. W. Kamrat. M. Jaskolski.								
	PG 2019 (unpublished)				,,				

	Supplementary literature	Dilemmas Facing Investors on the Energy Market J. Popczyk, Polish Power Plants 2005, TGPE Warsaw 2005				
		What Does the Electric EnergyIndustry Community Expect, W. Nikodem, Polish Power Plants 2005, TGPE Warsaw 2005				
	eResources addresses	Adresy na platformie eNauczanie:				
Example issues/ example questions/ tasks being completed	Development of energy markets, Modern technologies, efficiency analysis, Outlays and costs, Local markets for heat and gas					
Work placement	Not applicable					