GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Energy Auditing, PG_00055968		
Field of study	Power Engineering, Power Engineering, Power Engineering		
Date of commencement of studies	October 2023	Academic year of realisation of subject	2025/2026
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	3	Language of instruction	Polish
Semester of study	6	ECTS credits	3.0
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	15.0	0.0	30

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	30	8.0	37.0	75

Subject objectives

Student achives the qalifications of an energy auditor.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[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	The student is able to calculate and use investment profitability indicators to choose the option of energy-efficient modernization.	[SW3] Assessment of knowledge contained in written work and projects
[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	The student is able to perform an energy audit.	[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	The student can assess the heat supply system of the building.	[SW3] Assessment of knowledge contained in written work and projects

Subject contents

Energy audit system. Role and aims of auditor work. Structure of energy audit and organization of its preparation. Organization of data collecting and analyzing processes. Data collection forms. Presentation of energy audits examples. Choosing of energy sources. Criterions of choose. Possibilities of energy source substitution. Calculation of investments costs. Complex analysis of energy conservation modernization program. Non-economic criterions for analysis of modernization effects. Environmental effects of energy conservation programs. Preparation of energy audit of the object. Estimation of energy consumption before the modernization. Proposal of energy conservation modernizations. Effectiveness analysis of implemented modernizations.

Prerequisites and co-requisites

basis of thermal technic

<table>
<tr><td>Assessment methods and criteria</td><td colspan="3"><table><tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr><tr><td>Project</td><td>60.0%</td><td>100.0%</td></tr></table></td></tr>
<tr><td rowspan="3">Recommended reading</td><td>Basic literature</td><td colspan="2">1. Górzyński J: Audyting energetyczny. Warszawa: Fundacja Poszanowania Energii 2002.</td></tr>
<tr><td>Supplementary literature</td><td colspan="2">1. Robakiewicz M.: Ocena cech energetycznych budynków. Fundacja Poszanowania Energii 2005.</td></tr>
<tr><td>eResources addresses</td><td colspan="2">Adresy na platformie eNauczanie:</td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td colspan="3">1. Calculation of seasonal energy demand for heating a building.

2. Calculation of energy demand for the hot water.</td></tr>
<tr><td>Work placement</td><td colspan="3">Not applicable</td></tr>
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