



Subject card

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|---|--|--|----------|-------------------------------------|--|--|-----|
| Subject name and code | Energy Auditing, PG_0005968 | | | | | | |
| Field of study | Power Engineering, Power Engineering, Power Engineering | | | | | | |
| Date of commencement of studies | October 2021 | Academic year of realisation of subject | | | | 2023/2024 | |
| 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 achieves the qualifications of an energy auditor. | | | | | | |
| Learning outcomes | Course outcome | Subject outcome | | | Method of verification | | |
| | [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 | | |
| | [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_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 | | |
| 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. Criteria of choose. Possibilities of energy source substitution. Calculation of investments costs. Complex analysis of energy conservation modernization program. Non-economic criteria 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 | | | | | | |
| Assessment methods and criteria | Subject passing criteria | Passing threshold | | | Percentage of the final grade | | |
| | Project | 60.0% | | | 100.0% | | |

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| Recommended reading | Basic literature | 1. Górzyński J: Audyting energetyczny. Warszawa: Fundacja Poszanowania Energii 2002. |
| | Supplementary literature | 1. Robakiewicz M.: Ocena cech energetycznych budynków. Fundacja Poszanowania Energii 2005. |
| | eResources addresses | |
| Example issues/ example questions/ tasks being completed | 1. Calculation of seasonal energy demand for heating a building. 2. Calculation of energy demand for the hot water. | |
| Work placement | Not applicable | |