COURSE DESCRIPTION CARD - SYLLABUS

Course name
Electrical installations in buildings [S2Eltech2-UiIE>IEOB1]

Course

Field of study
Electrical Engineering

Year/Semester
1/2

Area of study (specialization)
Distribution Devices and Electrical Installations

Profile of study
general academic

Level of study
second-cycle

Course offered in
Polish

Form of study
full-time

Requirements
compulsory

Number of hours

Lecture
15

Laboratory classes
0

Other
0

Tutorials
0

Projects/seminars
15

Number of credit points

2,00

Coordinators

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Lecturers

Prerequisites

Basic knowledge on the construction and operation of electrical equipment and installations as well as measuring apparatus and its use. Ability to obtain information from subject literature and other sources as well as critically analyze them. Understanding the need for creative action to promote and implement the effects of technical progress.

Course objective

Acquiring extended knowledge in the field of operation, construction and design of electrical building infrastructure, taking into account the integration of systems ensuring their proper cooperation in normal operating conditions and in disturbances.

Course-related learning outcomes

Knowledge:
student has theoretical knowledge in the design of electrical equipment and systems, taking into account their impact on the environment. Student has extended knowledge of the construction and design of complex electrical systems in the field of electrical installation systems in buildings.

Skills:
Student is able to take into account the utility and economic criteria in the design of components and installation systems. Student is able to design installation systems for specific applications.

Social competences:
Understands the need for continuous education and the importance of knowledge for solving technical problems.

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Lecture:
- knowledge acquired as part of the lecture is verified by a written final exam consisting of open or test questions with different points. Passing threshold: 50% of points,
- current grading in each lecture (rewarding activities).

Projects:
- the preparation of materials for the project is evaluated,
- substantive preparation for the implementation of the assigned project is evaluationed,
- project and its defense are evaluated.

Programme content

Electrical installation systems in buildings. Lightning, surge, anti-shock and fire protection. Access control. Computer and telecommunications networks.

Course topics

Lecture:
- Technical conditions that should be met by electrical installation systems in buildings,
- Lightning protection systems,
- Surge protection,
- Anti-shock protection measures,
- Fire protection systems,
- Types and properties of structured cabling,
- Access control,
- Computer and telecommunications networks,
- Cable management systems,
- Guaranteed power supply systems,
- Development trends in electrical installations.

Project:
The assigned project in the field of electrical installation systems should be implemented, taking into account input and output data, design diagrams, substitute diagrams and technical calculations.

Teaching methods

Lecture:
- multimedia or object-oriented presentations supported by illustrated examples presented on the board,
- interactive lecture with questions and initiating discussions.

Projects:
- using dedicated or developed computer applications, graphic programs and catalogs of installation equipment manufacturers.

Bibliography

Basic:
1. Markiewicz H., Instalacje elektryczne, WNT, Warszawa, 2018.
2. Lejdy B., Instalacje elektryczne w obiektach budowlanych, WNT W-wa, wyd. 2, 2005.
3. Markiewicz H. , Bezpieczeństwo w elektroenergetyce, WNT, Warszawa, wyd. 2, 2002.
4. Rozporządzenie Ministra Gospodarki Przestrzennej i Budownictwa z 14 grudnia 1994 roku w sprawie

warunków jakim powinny odpowiadać budynki i ich usytuowanie. Tekst jednolity.
5. PN-IEC 60364, Instalacje elektryczne w obiektach budowlanych.
6. Electrical installation. Design Guide. Calculation for Electricians and Designers. 3td Edition. The Institution of Engineering and Technology.

Additional:
1. Praca zbiorowa, Switchgear manual, ABB Schaltanlagen GmbH, Manheim, Federal Republic of Germany, 11-th editions 2006.
2. Periodyki: Elektroinstalator, Elektroinfo.
3. Poradnik inżyniera elektryka, WNT.
4. Dombek, G.; Książkiewicz, A.; Janiszewski, J. Electrodynamic contact bounce induced by fault current in low-voltage relays. Energies, 2018, vol. 12, no. 20, pp. 3926-1-3926-13.
5. Catalogs
6. Internet publications.

Breakdown of average student's workload

	Hours	ECTS
Total workload	55	2,00
Classes requiring direct contact with the teacher	30	1,00
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	25	1,00