



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

The electric wiring systems in buildings

### Course

Field of study

Electrical Engineering

Area of study (specialization)

Distribution Devices and Electrical Installations

Level of study

Second-cycle studies

Form of study

full-time

Year/Semester

2/3

Profile of study

general academic

Course offered in

polish

Requirements

compulsory

### Number of hours

Lecture

15

Laboratory classes

15

Other (e.g. online)

0

Tutorials

0

Projects/seminars

15

### Number of credit points

5

### Lecturers

Responsible for the course/lecturer:

Grzegorz Dombek, Ph. D., Eng.

Responsible for the course/lecturer:

Faculty of Environmental Engineering and  
Energy

Institute of Electric Power Engineering

e-mail: grzegorz.dombek@put.poznan.pl

tel. 61 665 2192

### 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).

#### Laboratory classes:

- current check and rewarding knowledge necessary for the accomplishment of the problems in the area of laboratory tasks,
- evaluation of reports performed on laboratory classes,
- rewarding activities related to the implementation of laboratory classes.

#### 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

#### Lecture:

Technical conditions to be met by electrical installation systems in buildings. Lightning, surge, electric shock and fire protection systems. Structured cabling. Access Control. Computer and telecommunications networks. Cable routing systems. Guaranteed power supply systems. Development trends of electrical installations.



Laboratory classes:

Classes discussing the regulations of the laboratory, topics of laboratory classes and OHS training related to the operation of laboratory positions. To perform 6 two-hour laboratory classes in the field of lecture.

Projects:

Assigned project to be implemented in the field of electric wiring systems in buildings including output data, design diagrams, replacement 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.

Laboratory classes:

- object-oriented presentations supported by illustrated examples presented on the board,
- presentations of selected experiments,
- initiating teamwork.

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.

Additional

1. Praca zbiorowa, Switchgear manual, ABB Schaltanlagen GmbH, Mannheim, Federal Republic of Germany, 11-th editions 2006.



2. Perodyki: Elektroinstalator, Elektroinfo.
3. Poradnik inżyniera elektryka, WNT.
4. Catalogs
5. Internet publications.

#### Breakdown of average student's workload

	Hours	ECTS
Total workload	139	5,0
Classes requiring direct contact with the teacher	81	3,0
Student's own work (literature studies, preparation for laboratory classes, preparation of reports, preparation for exam, project preparation) <sup>1</sup>	58	2,0

<sup>1</sup> delete or add other activities as appropriate