



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Electrical installations in industry and vehicles

### Course

Field of study

Year/Semester

Electrical engineering

2/3

Area of study (specialization)

Profile of study

Electrical Systems in Industry and Vehicles

general academic

Level of study

Course offered in

Second-cycle studies

English

Form of study

Requirements

full-time

elective

### Number of hours

Lecture

Laboratory classes

Other (e.g. online)

0

15

0

Tutorials

Projects/seminars

0

0

### Number of credit points

1

### Lecturers

Responsible for the course/lecturer:

Responsible for the course/lecturer:

dr inż. Arkadiusz Dobrzycki

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### Prerequisites

A student starting this course should have knowledge in the field of electrical engineering, power engineering, as well as basic knowledge of engineering software and the principles of preparing project documentation.

### Course objective

Acquainting with the principles of designing low voltage electrical installations and distribution networks; in particular, the method of preparing design documentation for electrical installations.

### Course-related learning outcomes

Knowledge

1. has systematic knowledge of building, designing and operation of power installations and networks



2. knows the methodologies of designing electrical installations, the software used for this purpose and is familiar with modern installation technology

#### Skills

1. is able to compare different variants of supplying consumers and receivers with regard to the set criteria
2. is able to develop design documentation for electrical installations with the use of specialized software

#### Social competences

1. is aware of the responsibility of the electrical engineer, in particular of the impact of his activities on the safety of the use of electrical installations

#### Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Laboratory: ongoing evaluation of the performance of individual laboratory tasks; evaluation of a final task; assessment of active participation in classes

#### Programme content

Laboratory:

Principles of designing electrical installations, requirements for design documentation. Rules for the selection of cables and protections. Planning of protection against electric shock, surge and fire. Computer-aided designing of electrical installations

#### Teaching methods

Laboratory:

Analysis of various technical solutions and aspects of solved problems, including: economic, ecological, legal, social, etc. Preparation of documentation fragments, calculations and selections for selected case studies.

#### Bibliography

Basic

1. Markiewicz H.: Instalacje elektryczne, WNT, Warszawa 2017.
2. Lejdy B.: Instalacje elektryczne w obiektach budowlanych, WNT, Warszawa 2003.
3. Niestępski S., Parol M., Pasternakiewicz J., Wiśniewski T.: Instalacje elektryczne. Budowa projektowanie i eksploatacja, Oficyna Wydawnicza Politechniki Warszawskiej, Warszawa 2019.
4. Orlik W.: Egzamin kwalifikacyjny elektryka w pytaniach i odpowiedziach, KaBe S. C., Krosno 2018.
5. IEC 60364 Electrical Installations for Buildings



6. The Electrical Installation Guide (available online: <https://www.electrical-installation.org>)

7. Normy i rozporządzenia związane z instalacjami elektrycznymi.

#### Additional

1. Dobrzycki A., Analiza parametrów energii elektrycznej w przedsiębiorstwie produkcyjnym branży aluminiowej, Academic Journals Poznan University of Technology, nr 74, 2013, 119-126

2. Tematyczne strony internetowe.

3. Katalogi producentów przewodowania i aparatów instalacyjnych.

4. Dokumentacja oprogramowania inżynierskiego.

#### Breakdown of average student's workload

	Hours	ECTS
Total workload	25	1,0
Classes requiring direct contact with the teacher	15	0,5
Student's own work (literature studies, preparation for laboratory classes, preparation for final task) <sup>1</sup>	10	0,5

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