



COURSE DESCRIPTION CARD - SYLLABUS

Course name

Electrical Installations

Course

Field of study

Year/Semester

Power Engineering

2/3

Area of study (specialization)

Profile of study

Ecological sources of electricity

general academic

Level of study

Course offered in

Second-cycle studies

polish

Form of study

Requirements

full-time

compulsory

Number of hours

Lecture

Laboratory classes

Other (e.g. online)

15

15

Tutorials

Projects/seminars

15

Number of credit points

Lecturers

Responsible for the course/lecturer:

Responsible for the course/lecturer:

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Engineering

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Prerequisites

Basic knowledge of electrical engineering, electronics and computer science as well as electrical power engineering.

Course objective

Acquainted with the design, construction and operation of electrical installations and low voltage distribution networks. Acquainting with ways of keeping project documentation in the field of electrical installations.



Course-related learning outcomes

Knowledge

1. has knowledge in the field of construction, design and operation of power installations and networks and knows the methods and apparatus used during periodic testing of electrical installations,
2. knows the methodologies for designing electrical installations, the software used for this purpose and is familiar with modern installation technology.

Skills

1. can compare different variants of power supply for consumers and receivers due to given criteria,
2. able to develop project documentation for electrical installations,
3. can indicate aspects related to occupational health and safety,
4. is able to choose the method and tools and perform basic tests of protections and cables used in power installations.

Social competences

1. is aware of the responsibility of the power engineering engineer, in particular the impact of his activities on the safety of use of electrical installations, and also understands the need to provide information on the status of installations to its users.

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Lecture: assessment of knowledge and skills demonstrated on the written exam of a descriptive / problem nature (checking the ability to use the acquired knowledge). Individual elements assessed according to the points system, 50% of the maximum number of points required to pass.

Laboratory classes: rewarding the knowledge necessary to implement the problems posed in a given area of laboratory tasks, assessment of knowledge and skills related to the implementation of the exercise task, including evaluation of the report of the exercise.

Projects: the assessment covers substantive content and the ability to present and answer project questions, rewarding systematic progress in project work, obtaining additional points for activity during classes.

Programme content

Lecture: electrical equipment of low voltage electrical installations as well as their characteristics and parameters, principles of building, designing, operating and checking lv electrical installations; protection ensuring safety, electric shock protection, rules for rescuing people who are electrocuted.

Laboratory classes: the use of engineering software in the design of electrical installations, measuring classes including the analysis of quality parameters of electricity, the properties of electrical light sources, periodic installation measurements.



Projects: design principles for electrical installations, solving typical design tasks.

Teaching methods

Lecture: lecture with multimedia presentation (including drawings, photos, animations, sound, films) supplemented by examples given on the board, lecture conducted in an interactive way with the formulation of questions for a group of students or specific students indicated, initiating discussions during the lecture, taking into account various aspects of the issues presented, including: economic, ecological, legal, social, etc., presenting a new topic preceded by a reminder of related content known to students in other subjects;

Laboratory classes: demonstrations, independent performance of tasks.

Projects: solving sample project tasks on the board, detailed reviewing task solutions by the tutor of the exercises and discussions on comments, initiating discussions on solutions.

Bibliography

Basic

1. Laskowski J. Nowy poradnik elektroenergetyka przemysłowego, Centralny Ośrodek Szkolenia i Wydawnictw SEP, Warszawa 2011.
2. Markiewicz H. Instalacje elektryczne WNT, Warszawa, 2012.
3. Niestępski S., Parol M., Pasternakiewicz J., Wiśniewski T., Instalacje elektryczne budowa, projektowanie, eksploatacja", Oficyna Wydawnicza Politechniki Warszawskiej, Warszawa, 2011.
4. Orlik W. Egzamin kwalifikacyjny elektryka w pytaniach i odpowiedziach, KaBe S. C., Krosno, 1999.

Additional

1. Standards and regulations related to electrical installations.
2. Themed websites.
3. Catalogs of wiring and installation apparatus manufacturers.

Breakdown of average student's workload

	Hours	ECTS
Total workload	95	4,0
Classes requiring direct contact with the teacher	50	2,0
Student's own work (literature studies, preparation for laboratory classes/tutorials, preparation for tests/exam, project preparation) ¹	45	2,0

¹ delete or add other activities as appropriate