STUDY MODULE DESCRIPTION FORM

Name of the module/subject		Code
Electrical installations		**1010321371010321941**
Field of study: **Electrical Engineering**	Profile of study (general academic, practical): **(brak)**	Year /Semester: **4 / 7**
Elective path/specialty: **Electrical and Computer Systems in**	Subject offered in: **Polish**	Course (compulsory, elective): **obligatory**
Cycle of study: **First-cycle studies**	Form of study (full-time,part-time): **full-time**	
No. of hours: Lecture: **15** Classes: **-** Laboratory: **-** Project/seminars: **30**		No. of credits: **5**
Status of the course in the study program (Basic, major, other): **(brak)**	(university-wide, from another field): **(brak)**	
Education areas and fields of science and art: **technical sciences** **Technical sciences**		ECTS distribution (number and %): **5 100%** **5 100%**

Responsible for subject / lecturer:

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Prerequisites in terms of knowledge, skills and social competencies:

1	**Knowledge**	Basic knowledge of electrical engineering and power engineering.
2	**Skills**	Using a spreadsheet. Ability to effectively self-education in a field related to the chosen field of study.
3	**Social competencies**	Is aware of the need to broaden their competence, willingness to work together in a team.

Assumptions and objectives of the course:

Knowledge of design, construction and operation of electrical and low-voltage distribution networks. Learning the processes of the design documentation for the installation of electrical equipment.

Study outcomes and reference to the educational results for a field of study

Knowledge:

1. has a basic and systematic knowledge of construction, design and operation of electrical systems and networks - [K_W04+, K_W08++]

2. knows the electrical installations design methodologies used for this purpose software, and versed in modern technology in installations - [K_W18++]

Skills:

1. able to compare different variants of power users and consumers due to the given criteria, as well as how to develop the design documentation for electrical installations using specialized software - [K_U07+++, K_U01++, K_U12++]

Social competencies:

1. is aware of the responsibility of the engineer-energy, in particular the impact of its activities on the safe operation of electrical installations - [K_K02+]

Assessment methods of study outcomes

Lecture:

? assess the knowledge and skills listed on the written exam,

? continuous evaluation for each course (rewarding activity and quality perception).

Class project:

? assessment of the final design for the electrical system,

? assessment review progress made on the project, as well as active participation in the classes.

Get extra points for the activity in the classroom, and in particular for:

? propose to discuss further aspects of the subject,

? the effectiveness of the application of the knowledge gained during solving the given problem,

? diligence aesthetic design of the project.

Course description

Electrical equipment of low voltage electrical installations, and their characteristics and parameters. Principles of construction, design, operation and testing low-voltage electrical installations providing security protection, shock protection for low-voltage electrical installations Rules rescue of persons affected by electricity.

Basic bibliography:

1. Markiewicz H.: Instalacje elektryczne, WNT, Warszawa 2012.

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 2011.

4. Orlik W.: Egzamin kwalifikacyjny elektryka w pytaniach i odpowiedziach, KaBe S. C., Krosno 2011.

Additional bibliography:

1. Standards and law regulations connectec with electrical installations

2. Internet.

Result of average student's workload

Activity	Time (working hours)
1. participation in lectures	15
2. participation in project classes	30
3. participate into consultations concerning the lecture	5
4. participate into consultations concerning the project classes	10
5. development of project	40
6. prepare for the exam	15
7. completion of projects	4
8. participation in the exam	4

Student’s workload

Source of workload	hours	ECTS
Total workload	123	5
Contact hours	68	3
Practical activities	84	3