

## DESCRIPTION OF THE COURSES

- Course code: ARR 2404
- Course title: **The electrical installations in power industry objects**
- Language of the lecturer: polish

<i>Course form</i>	<i>Lecture</i>	<i>Classes</i>	<i>Laboratory</i>	<i>Project</i>	<i>Seminar</i>
<i>Number of hours/week*</i>	2	1			
<i>Number of hours/semester*</i>	30	15			
<i>Form of the course completion</i>	<i>class test</i>	<i>completion</i>			
<b><i>ECTS credits</i></b>	2	1			
<b><i>Total Student's Workload</i></b>	60	30			

- Level of the course (basic/advanced): advanced
- Prerequisites: Credited Electrical Equipment
- Name, first name and degree of the lecturer/supervisor: Zbigniew Wróblewski, PhD, DSc
- Names, first names and degrees of the team's members:  
Lech Danielski, PhD,  
Ryszard Zacirka, PhD,  
Marek Jaworski, PhD,  
Marek Szuba, PhD,  
Janusz Konieczny, PhD.
- Year: 5 Semester: 10
- Type of the course (obligatory/optional): optional
- Aims of the course (effects of the course): Recognize requirements for electric installations in power industry objects
- Form of the teaching (traditional/e-learning): traditional
- Course description

Basic definitions, classification. Requirements for electric installations. Types of electrical networks. Calculating of expected current-carrying values. Components of electric installation: switches, conductors. Overcurrent protection devices and its selectivity. Principles of choosing of conductors and overcurrent protective devices. Voltage drops calculations. Equipotential bonding. Principles of building of industrial electric installations. The electrical installations in power industry objects. Fire protection. Lightning and overvoltage protection.

- Lecture

<i>Particular lectures contents</i>	<i>Number of hours</i>
1. Electric installations: basic definitions, classification, requirements. Industrial electric networks systems.	2
2. Calculating of expected current-carrying values.	2
3. Components of electric installation: switches, conductors.	2
4. Overload protection and fault protection.	2
5. Principles of choosing of conductors and overcurrent protective devices.	2

6. Principles of selectivity of overcurrent protection devices.	2
7. Voltage drops in electric installations.	2
8. Automatic disconnection of supply.	2
9. Earthing systems and equipotential bonding.	2
10. Principles of building of industrial electric installations.	2
11. Internal load in power industry objects.	2
12. The electrical installations in power industry objects.	2
13. Fire protection.	2
14. Lightning protection in power industry objects.	2

- Classes – the contents
  1. Calculating of expected current-carrying values in industrial and power industrial objects.
  2. Choosing of conductors and overcurrent protective devices – installations designing.
  3. Voltage drops calculations.
  4. Verification of effectiveness of automatic disconnection of supply.
  5. Internal load in power industry objects.
  6. Calculations of lightning and overvoltage protection systems.
- Seminars – the contents
- Laboratory – the contents
- Project – the contents
- Basic literature:
  1. Markiewicz H. Instalacje elektryczne. WNT, Warszawa 2005.
  2. Jabłoński W. Zapobieganie porażeniom elektrycznym w urządzeniach elektroenergetycznych WN, WNT, Warszawa 1992.
  3. Norma PN-IEC 60364. Instalacje elektryczne w obiektach budowlanych.
- Additional literature:
  1. Ustawa z dnia 7.07.1994 r. „Prawo budowlane” (Dz. U. z 1994 r. nr 89, poz. 414).
  2. Rozporządzenie Ministra Infrastruktury z dnia 12 kwietnia 2002 r. w sprawie warunków technicznych, jakim powinny odpowiadać budynki i ich usytuowanie. (Dz.U. 2002 nr 75 poz. 690).
- Conditions of the course acceptance/creditation:

Completion of the course is confirmed on the basis of class test covering the whole material

\* - depending on a system of studies