



## Subject card

Subject name and code	Electrical equipment and installations (WEIA), PG_00042094						
Field of study	Power Engineering, Power Engineering						
Date of commencement of studies	October 2022	Academic year of realisation of subject			2024/2025		
Education level	first-cycle studies	Subject group					
Mode of study	Full-time studies	Mode of delivery			at the university		
Year of study	3	Language of instruction			English		
Semester of study	6	ECTS credits			4.0		
Learning profile	general academic profile	Assessment form			assessment		
Conducting unit	Department of Electrical Power Engineering -> Faculty of Electrical and Control Engineering						
Name and surname of lecturer (lecturers)	Subject supervisor		prof. dr hab. inż. Zbigniew Lubośny				
	Teachers						
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	0.0	0.0	15.0	30
	E-learning hours included: 0.0						
Learning activity and number of study hours	Learning activity	Participation in didactic classes included in study plan		Participation in consultation hours		Self-study	SUM
	Number of study hours	30		5.0		65.0	100
Subject objectives	Acquainting with the construction and principles of selection of elements of electrical installations.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K6_W03] knows the basics of automation and automatic regulation, knows the principles of the selection of electrical devices, drive systems and their control						
	[K6_W05] has structured knowledge in the field of electrical engineering and electronics, necessary to understand the basics of operation and selection of electrical machines, electricity transmission systems and power electronic devices						
	[K6_U01] can obtain information from literature and other sources, organize, interpret it and draw and formulate conclusions; has the ability to self-educate, interprets the results of completed engineering tasks, is able to design simple energy systems and their systems						
	[K6_K03] is able to react in emergency situations, threats to health and life when using energy devices, is aware of the impact of engineering activities on the environment						
Subject contents	Electrical installations - definitions, structure, requirements. Impact of working and short-circuit currents on installation components. Power cables, fuses, circuit breakers, differential circuit breakers - design and characteristics. Principles of installation design.						
Prerequisites and co-requisites	Basics of electrical engineering.						
Assessment methods and criteria	Subject passing criteria		Passing threshold		Percentage of the final grade		
	Test		60.0%		100.0%		

Recommended reading	Basic literature	<p>Markowski H.: Urządzenia i instalacje elektroenergetyczne. WNT Warszawa 2006.</p> <p>Musiał E.: Urządzenia elektroenergetyczne. PWSiP, Warszawa 2003.</p> <p>Poradnik Inżyniera elektryka. WNT Warszawa 2011.</p> <p>N SEP-E-002 Instalacje elektryczne w obiektach budowlanych.</p> <p>Instalacje elektryczne w obiektach mieszkalnych. Warszawa 2006.</p> <p>Electrical installation guide. According to IEC International Standards. Schneider Electric, 2018</p> <p>Electrical installations handbook. Protection, control and electrical devices. ABB SACE 2010</p>
	Supplementary literature	<p>Ismail Kasicki, Short Circuits in Power Systems. A practical Guide to IEC 60909. Wiley-VCH. 2002.</p> <p>IEC 60364)Low-voltage electrical installations. PN-IEC 60364 Instalacje elektryczne w obiektach budowlanych.</p> <p>Bill Atkinson, Electrical Installations Designs. John Wiley &amp; Sons, 2013</p>
	eResources addresses	Adresy na platformie eNauczanie:
Example issues/ example questions/ tasks being completed	Design a part of the installation in terms of cable selection and protection (fuse, circuit breaker).	
Work placement	Not applicable	