



## Subject card

Subject name and code	Electrical Installations, PG_00055886						
Field of study	Power Engineering, Power Engineering, Power Engineering						
Date of commencement of studies	October 2022	Academic year of realisation of subject			2023/2024		
Education level	first-cycle studies	Subject group			Obligatory subject group in the field of study Subject group related to scientific research in the field of study		
Mode of study	Full-time studies	Mode of delivery			at the university		
Year of study	2	Language of instruction			Polish		
Semester of study	3	ECTS credits			3.0		
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	dr inż. Seweryn Szultka prof. dr hab. inż. Zbigniew Lubośny					
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	0.0	15.0	0.0	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	8.0		37.0	75	
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	The student can select items electrical installation system.			[SW1] Assessment of factual knowledge		
	[K6_W08] has basic knowledge in the field of intellectual property protection and patent law, knows and understands the basic processes of energy production and use, knows and understands the principles of modern heating and power systems	The student knows circuits and systems protection against electric shocks and phenomena occurring in during normal and emergency operation electrical installations.			[SW3] Assessment of knowledge contained in written work and projects		
	[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	The student can design electrical installation.			[SK5] Assessment of ability to solve problems that arise in practice		
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	Markowski H.: Urządzenia i instalacje elektroenergetyczne. WNT Warszawa 2006. Musiał E.: Urządzenia elektroenergetyczne. PWSiP, Warszawa 2003. Poradnik Inżyniera elektryka. WNT Warszawa 2011. N SEP-E-002 Instalacje elektryczne w obiektach budowlanych. Instalacje elektryczne w obiektach mieszkalnych. Warszawa 2006. Electrical installation guide. According to IEC International Standards. Schneider Electric, 2018 Electrical installations handbook. Protection, control and electrical devices. ABB SACE 2010
	Supplementary literature	Ismail Kasikci, Short Circuits in Power Systems. A practical Guide to IEC 60909. Wiley-VCH. 2002. IEC 60364)Low-voltage electrical installations. PN-IEC 60364 Instalacje elektryczne w obiektach budowlanych. Bill Atkinson, Electrical Installations Designs. John Wiley & Sons, 2013
	eResources addresses	Adresy na platformie eNauczenie:
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	