



Subject card

Subject name and code	Electrical Power Engineering, PG_00038441						
Field of study	Electrical Engineering						
Date of commencement of studies	October 2022	Academic year of realisation of subject			2023/2024		
Education level	first-cycle studies	Subject group					
Mode of study	Full-time studies	Mode of delivery			at the university		
Year of study	2	Language of instruction			Polish		
Semester of study	4	ECTS credits			4.0		
Learning profile	general academic profile	Assessment form			exam		
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. Ryszard Zajczyk					
	Teachers	prof. dr hab. inż. Ryszard Zajczyk					
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	0.0	15.0	0.0	0.0	45
	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	45	7.0		48.0		100
Subject objectives	To acquaint students with the work of the power system.						
Learning outcomes	Course outcome	Subject outcome			Method of verification		
	K6_K01	The student identifies the basic laws of electrical engineering in application to electrical power engineering			[SK2] Assessment of progress of work		
	K6_W09	Student identifies basic power laws.			[SW1] Assessment of factual knowledge		
	K6_U06	Student calculates current and power flows and voltage levels in the power system, uses standards in the field of short-circuit calculations in the power industry.			[SU4] Assessment of ability to use methods and tools [SU2] Assessment of ability to analyse information		
Subject contents	The Basic knowledge of the power system structure, main devices being the circuit elements of generation, transmission and distribution of electrical energy. The construction of electrical power engineering of overhead and cable power-lines, wires and basic devices and equipment used for building the power- line. Substitute schemes of transformers and overhead and cable power-lines. Calculating the current and power distributions, losses of power, tension levels in grids of uni- and bilateral supplies and in junction grids. Short circuits in electrical Power engineering grids, courses of short circuit currents, the principles and methods of calculating the short circuit currents during symmetrical short circuits. Earthings/ groundings ? in grids with isolated stellar points of the transformers.						
Prerequisites and co-requisites	The basics of electrical engineering, the basics of power industry						
Assessment methods and criteria	Subject passing criteria	Passing threshold			Percentage of the final grade		
	Written exam	60.0%			60.0%		
	Midterm colloquium	60.0%			40.0%		
Recommended reading	Basic literature	Kujarczyk Sz.: Elektroenergetyczne sieci rozdzielcze, tom I i II, Oficyna Wydawnicza PW, Warszawa 2004.					
	Supplementary literature	Kremens Z., Sobierajski M.: Analiza systemów elektroenergetycznych. WNT Warszawa 1996 Kacejko P., Machowski J.: Zwarcia w systemach elektroenergetycznych WNT Warszawa 2002					
	eResources addresses	Adresy na platformie eNauczenie: Elektroenergetyka [2023/24] - Moodle ID: 35757 https://enauczenie.pg.edu.pl/moodle/course/view.php?id=35757					

Example issues/ example questions/ tasks being completed	Calculation of load flow in electricity grids. Calculation of short-circuit currents in electrical power systems.
Work placement	Not applicable