GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Electrical Power Engineering, PG_00038441		
Field of study	Electrical Engineering		
Date of commencement of studies	October 2025	Academic year of realisation of subject	2026/2027
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 -> Wydziały Politechniki Gdańskiej		
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Robert Kowalak	
	Teachers		

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_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.	[SU2] Assessment of ability to analyse information [SU4] Assessment of ability to use methods and tools
K6_W09	Student identifies basic power laws.	[SW1] Assessment of factual knowledge
K6_K01	The student identifies the basic laws of electrical engineering in application to electrical power engineering	[SK2] Assessment of progress of work

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. Eatrthings/ gruondings ? 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
Midterm colloquium	60.0%	40.0%
Written exam	60.0%	60.0%

Recommended reading

Basic literature	Kujszczyk 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 eNauczanie:

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

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