



## Subject card

Subject name and code	Electrical Engineering, PG_00039883						
Field of study	Mechanical Engineering, Mechanical Engineering						
Date of commencement of studies	October 2020	Academic year of realisation of subject			2021/2022		
Education level	first-cycle studies	Subject group			Obligatory subject group 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	4	ECTS credits			2.0		
Learning profile	general academic profile	Assessment form			assessment		
Conducting unit	Department of Power Electronics and Electrical Machines -> Faculty of Electrical and Control Engineering						
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. Filip Kutt				
	Teachers		dr inż. Krzysztof Iwan				
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	15.0	0.0	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		5.0		15.0	50
Subject objectives	The objective of the course is to familiarize students with the basic laws of electrical engineering and the basics of electrical and electromechanical energy conversion						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K6_U05] is able to plant an experiment within the range of measuring the basic operating parameters of mechanical devices using a specialized equipment, interpret the results and reach the correct conclusions		The student has the ability to read electrical diagrams. The student has the ability to interpret and correctly analyse the results of simulation and experimental research		[SU2] Assessment of ability to analyse information [SU4] Assessment of ability to use methods and tools		
	[K6_W10] possesses basic knowledge on electronics and electrical engineering		The student knows and understands the basic concepts and laws of electrical and electromechanical energy conversion		[SW1] Assessment of factual knowledge		
Subject contents	Principles and laws of electrical engineering. Measurements of electrical and non-electrical quantities. Electric drives. Production and distribution of electricity in the power system. Basics of electronics and power electronics. Rules for safe work with electrical devices.						
Prerequisites and co-requisites	Knowledge of basic laws of physics. Ability to use tools of analytical mathematics						
Assessment methods and criteria	Subject passing criteria		Passing threshold		Percentage of the final grade		
	Written exam		50.0%		50.0%		
	Practical exercises		50.0%		50.0%		
Recommended reading	Basic literature		1. Hambley A. R. Electrical Engineering Principles And Application, Pearson 2014 2. Szumanowski A. Basics of Electrical Engineering, Electrotechnics, Electronics And Electric Machines Oficyna Wydawnicza Politechniki Warszawskiej				
	Supplementary literature		1. Dennis T. H. Practical Marine Electrical Knowledge, Witherby Seamanship International Ltd				
	eResources addresses						

Example issues/ example questions/ tasks being completed	Provide and explain the definition of electric current. Present and explain the definitions of the RMS value of electric current. How can the speed of an induction / asynchronous motor be controlled?
Work placement	Not applicable