



## Subject card

Subject name and code	Electrotechnics and Electronics I, PG_00039826						
Field of study	Materials Engineering, Materials Engineering, Materials Engineering, Materials 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		blended-learning		
Year of study	2		Language of instruction		Polish		
Semester of study	3		ECTS credits		2.0		
Learning profile	general academic profile		Assessment form		assessment		
Conducting unit	Department of Electrochemistry, Corrosion and Materials Engineering -> Faculty of Chemistry						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. inż. Krzysztof Żakowski				
	Teachers		dr hab. inż. Krzysztof Żakowski				
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	0.0	0.0	0.0	0.0	30
	E-learning hours included: 28.0						
	Adresy na platformie eNauczanie: Elektrotechnika i elektronika (IM) - 2021/22 - Moodle ID: 13702 <a href="https://enauczanie.pg.edu.pl/moodle/course/view.php?id=13702">https://enauczanie.pg.edu.pl/moodle/course/view.php?id=13702</a>						
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		1.0		19.0	50
Subject objectives	The student masters the basics of electrical engineering in the scope enabling understanding of the principles of generation, transmission and distribution of electricity, operation of selected electrical machines, devices, systems, principles of operation of measuring instruments. The acquired knowledge will be useful in the further course of study, in future professional work and in everyday life when using modern electrical and electronic devices.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	K6_U06		Student is able to use modern electrical and electronic devices.		[SU4] Assessment of ability to use methods and tools		
	K6_K01		Student is able to properly set priorities for the implementation of specific tasks.		[SK5] Assessment of ability to solve problems that arise in practice		
	K6_W05		The student knows the application of basic electronic components.		[SW1] Assessment of factual knowledge		
Subject contents	<ul style="list-style-type: none"><li>• DC and AC electrical circuits.</li><li>• Three-phase systems.</li><li>• Electric machines: generators, motors, transformers.</li><li>• Power system.</li><li>• Electrical installations.</li><li>• Electrical measurements.</li><li>• Basic electronic components and systems.</li></ul>						
Prerequisites and co-requisites	General knowledge of electrical engineering. Fundamentals of physics.						
Assessment methods and criteria	Subject passing criteria		Passing threshold		Percentage of the final grade		
	test		60.0%		100.0%		
Recommended reading	Basic literature		not applicable				

	Supplementary literature	not applicable
	eResources addresses	Elektrotechnika i elektronika (IM) - 2021/22 - Moodle ID: 13702 <a href="https://enauczanie.pg.edu.pl/moodle/course/view.php?id=13702">https://enauczanie.pg.edu.pl/moodle/course/view.php?id=13702</a>
Example issues/ example questions/ tasks being completed	<ul style="list-style-type: none"> <li>• Connecting three-phase receivers in a star and triangle.</li> <li>• Commutator machines.</li> <li>• Induction motors.</li> <li>• TN-S, TN-C-S network systems.</li> <li>• Analog and digital meters.</li> <li>• Diodes, transistors, thyristors.</li> </ul>	
Work placement	Not applicable	