



## Subject card

Subject name and code	Electrotechnics and Electronics II, PG_00039795						
Field of study	Materials Engineering, Materials Engineering, Materials Engineering						
Date of commencement of studies	October 2021		Academic year of realisation of subject		2022/2023		
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 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				
			dr inż. Łukasz Gawel				
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	0.0	30.0	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		1.0		19.0	50
Subject objectives	Mastering the basics of electrical engineering by the student in the scope enabling the understanding of the principles of operation of selected electrical machines, devices, systems, principles of operation of measuring instruments. The acquired knowledge will be useful in the further course of studies, 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_U01		Student performs measurements of electrical quantities.		[SU4] Assessment of ability to use methods and tools		
	K6_W05		The student knows the application of basic electronic components.		[SW3] Assessment of knowledge contained in written work and projects		
	K6_U03		The student uses modern electrical and electronic devices.		[SU3] Assessment of ability to use knowledge gained from the subject		
	K6_K01		The student understands the need for continuous improvement of professional skills.		[SK5] Assessment of ability to solve problems that arise in practice		
Subject contents	<ul style="list-style-type: none"><li>• Measuring instruments.</li><li>• Resistance measurements.</li><li>• Measurements of earthing resistance.</li><li>• Diode and rectifiers.</li><li>• Operational amplifier.</li><li>• Prototype systems.</li><li>• Electrical installations of the apartment.</li></ul>						
Prerequisites and co-requisites							
Assessment methods and criteria	Subject passing criteria		Passing threshold		Percentage of the final grade		
	Participation in exercises and reports.		60.0%		100.0%		
Recommended reading	Basic literature		not applicable				
	Supplementary literature		not applicable				

	eResources addresses	Adresy na platformie eNauczenie: Elektrotechnika i elektronika IM 2022/23 lab. - Moodle ID: 24459 <a href="https://enauczenie.pg.edu.pl/moodle/course/view.php?id=24459">https://enauczenie.pg.edu.pl/moodle/course/view.php?id=24459</a>
Example issues/ example questions/ tasks being completed	<ul style="list-style-type: none"> <li>• Design of electrical installation.</li> <li>• Calculation of the equivalent resistance of the system.</li> <li>• Determination of the voltage-current characteristics of a diode.</li> <li>• Investigation of the characteristics of the integrating amplifier.</li> </ul>	
Work placement	Not applicable	