



## Subject card

Subject name and code	Electronic Circuit Design, PG_00038321						
Field of study	Automation, Robotics and Control Systems						
Date of commencement of studies	October 2024	Academic year of realisation of subject			2024/2025		
Education level	second-cycle studies	Subject group			Specialty subject group Subject group related to scientific research in the field of study		
Mode of study	Part-time studies	Mode of delivery			at the university		
Year of study	1	Language of instruction			Polish		
Semester of study	2	ECTS credits			4.0		
Learning profile	general academic profile	Assessment form			exam		
Conducting unit	Faculty of Electrical and Control Engineering						
Name and surname of lecturer (lecturers)	Subject supervisor		prof. dr hab. inż. Grzegorz Redlarski				
	Teachers						
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	20.0	0.0	10.0	0.0	0.0	30
	E-learning hours included: 0.0						
	Adresy na platformie eNauczanie:						
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		7.0		63.0	100
Subject objectives	Acquiring knowledge and skills to independently design of simple electronic circuits and Printed Circuit Boards.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K7_W03] has knowledge of digital signal processing algorithms, knows methods of designing digital circuits with given parameters						
	[K7_K02] can interact and work in a group assuming various roles and identify priorities for the achievement of a specific task		A student, working in a group, is able to solve basic problems in the field of designing of electronic circuits and PCBs.		[SK1] Assessment of group work skills		
[K7_U11] is able to design and realise simple electrical circuits and control systems for a facility or industrial process using computer systems		A student, using known methods and tools, can design a basic electronic circuits and PCBs.		[SU1] Assessment of task fulfilment [SU4] Assessment of ability to use methods and tools			
Subject contents	Knowledge of the basic principles of design of electronic circuits. Ability to create PCB boards Implementation of the project tasks based on advanced and professional software Altium Designer.						
Prerequisites and co-requisites	Basic knowledge of robotics and mechatronics.						
Assessment methods and criteria	Subject passing criteria		Passing threshold		Percentage of the final grade		
			70.0%		70.0%		
			100.0%		30.0%		

Recommended reading	Basic literature	<p>1. Ed. Blackwell, G.R.: "The Electronic Packaging Handbook", Boca Raton, CRC Press LLC, 2000.</p> <p>2. Horowitz P. Hill W.: "The Art of Electronics" Third Edition. Cambridge University Press.</p>
	Supplementary literature	1. Altium Designer Guide.
	eResources addresses	
Example issues/ example questions/ tasks being completed	<ol style="list-style-type: none"> <li>1. The rules connected with creation of PCB for analog circuits</li> <li>2. The rules connected with creation of PCB for digital circuits</li> <li>3. The rules connected with creation of PCB form microprocessor circuits</li> <li>4. The rules connected with testing process during PCB's computer design</li> </ol>	
Work placement	Not applicable	

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