



Subject card

Subject name and code	Microprocessors and Peripheral Systems in Automatics, PG_00044092							
Field of study	Electrical Engineering							
Date of commencement of studies	February 2024	Academic year of realisation of subject			2024/2025			
Education level	second-cycle studies	Subject group						
Mode of study	Full-time studies	Mode of delivery			at the university			
Year of study	1	Language of instruction			Polish			
Semester of study	2	ECTS credits			2.0			
Learning profile	general academic profile	Assessment form			assessment			
Conducting unit	Department of Controlled Electric Drives -> Faculty of Electrical and Control Engineering							
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. inż. Arkadiusz Lewicki					
	Teachers							
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	Learning of programming methods of external and internal peripherals of microprocessor systems							
Learning outcomes	Course outcome	Subject outcome			Method of verification			
	K7_W01	Is able to use numerical analysis methods to assess the correct operation of a microprocessor system			[SW3] Assessment of knowledge contained in written work and projects			
	K7_U03	The student is able to analyze the data and requirements provided in the technical documentation and, based on it, prepare control structures for peripheral systems			[SU4] Assessment of ability to use methods and tools [SU1] Assessment of task fulfilment			
	K7_W02	Has knowledge of measurements of electrical and non-electric quantities and their conversion into digital form			[SW3] Assessment of knowledge contained in written work and projects			
	K7_U02	Is able to prepare and present a short oral presentation on a topic related to the developed issue			[SU5] Assessment of ability to present the results of task			
Subject contents	Microprocessor and microcontroller. Embedded and external peripherals. Control methods of peripherals. Design of a peripheral control signals in the PLD. The structure and programming methods of PLD. Design of a logic structure for external peripheral management. The microcontroller structures and programming methods. Communication with external devices. Using of embedded peripherals.							
Prerequisites and co-requisites	Knowledge in the digital electronics area							
Assessment methods and criteria	Subject passing criteria	Passing threshold			Percentage of the final grade			
	The projects designed during laboratory exercises	60.0%			100.0%			
Recommended reading	Basic literature	1. Ducek: Digital Design with CPLD Application and VHDL 2. Uwe Meyer-Baese: Digital signal processing with Field Programmable Gate Array 3. J. Janiczek, A. Stępień: Systemy mikroprocesorowe i mikrokontrolery, Warszawa 2005 4. Krzyżanowski R.: Układy mikroprocesorowe, Warszawa 2007						
	Supplementary literature	None						
	eResources addresses	Adresy na platformie eNauczenie:						

Example issues/ example questions/ tasks being completed	Develop the logical structure for A/D or D/A converter control
Work placement	Not applicable