



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 2023		Academic year of realisation of subject		2023/2024		
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		dr hab. inż. Arkadiusz Lewicki				
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_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		
	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_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		[SU1] Assessment of task fulfilment [SU4] Assessment of ability to use methods and tools		
	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		
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 eNauczanie:				

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