



Subject card

Subject name and code	Digital Information Exchange Protocols, PG_00016958						
Field of study	Automation, Robotics and Control Systems						
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 Metrology and Information Systems -> Faculty of Electrical and Control Engineering						
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Michał Ziółko					
	Teachers	dr inż. Michał Ziółko					
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	0.0	15.0	0.0	0.0	15
	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	15	2.0	33.0	50		
Subject objectives	Introduce students with some of the protocols of sending information.						
Learning outcomes	Course outcome	Subject outcome			Method of verification		
	K7_W03	The student selects a communication protocol appropriate to the needs of the process and operating conditions of the measurement system. Correctly interprets data sent using a given protocol.			[SW3] Assessment of knowledge contained in written work and projects		
	K7_U11	The student selects a communication protocol appropriate to the needs of the process and operating conditions of the measurement system.			[SU1] Assessment of task fulfilment		
	K7_U05	The student selects a communication protocol appropriate to the needs of the process and operating conditions of the measurement system. Correctly interprets data sent using a given protocol.			[SU1] Assessment of task fulfilment		
	K7_K02	The student directs the work of the laboratory group or makes measurements or documents them.			[SK1] Assessment of group work skills		
Subject contents	Laboratory exercises for the transmission of information using different protocols and interfaces. The study of the performance of protocols used in the industry using various transmission media (eg, serial interfaces, ethernet). Transferring information with using the GPIB standard.						
Prerequisites and co-requisites	Basic knowledge of measurement systems. Basic knowledge of programming in LabVIEW environment.						
Assessment methods and criteria	Subject passing criteria	Passing threshold			Percentage of the final grade		
	Test at the beginning of exercise	60.0%			50.0%		
	Work at laboratory excersises	60.0%			50.0%		

Recommended reading	Basic literature	1. Information materials prepared by teacher.
	Supplementary literature	1. Mielczarek W.: <i>Szeregowe interfejsy cyfrowe</i> . HELION, 1993. 2. Świsulski D.: <i>Systemy Pomiarowe. Laboratorium</i> . Wydawnictwo Politechniki Gdańskiej. Gdańsk 2004.
	eResources addresses	Adresy na platformie eNauczanie: CYFROWE PROTOKOŁY WYMIANY INFORMACJI [2023/24] - Moodle ID: 32225 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=32225
Example issues/ example questions/ tasks being completed	<p>The structure of Modbus protocol.</p> <p>Calculating checksum compatible with Modbus protocol.</p> <p>Communication with industrial equipment using ADAM ASCII protocol.</p> <p>Communication with laboratory equipment using SCPI language and GPIB interface.</p>	
Work placement	Not applicable	