



Subject card

Subject name and code	Computer Adjustment Systems, PG_00049607						
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			3.0		
Learning profile	general academic profile	Assessment form			exam		
Conducting unit	Department of Electrical Power Engineering -> Faculty of Electrical and Control Engineering						
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. Seweryn Szultka				
	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		4.0		41.0	75
Subject objectives	Discussion: basic regulatory processes, how to study the basic parameters of the control system, issues related to the process of visualization and data acquisition.						
Learning outcomes	Course outcome		Subject outcome			Method of verification	
	K7_W08		Learns the principles of operation of selected devices included in the power system, recognizes the control algorithms and develops a concept for the control system of the selected device.			[SW1] Assessment of factual knowledge	
	K7_U10		The student learns to determine the parameters of the control system depending on the control system. Indication of external phenomena affecting the operation of the control system, introduction of disturbances from the side of the power system.			[SU1] Assessment of task fulfilment	
	K7_W09		It learns to use the programmable controller to build the indicated control system, including the possibility of visualization enabling the operation of the developed control system, archiving and data editing.			[SW1] Assessment of factual knowledge	
Subject contents	LECTURES Regulation systems, their aims and structure. Examples of chosen regulation system block diagrams. Modifications of block diagrams. Digital control : control methods, digital measurement systems. Visualisation and archiving of regulation data. LABORATORIES Laboratories consist of 2 parts. First is to create chosen regulation system using PLC controller. Second is to create visualization and archiving application for created control system.						
Prerequisites and co-requisites	Ability to program PLC controllers. "Sterowniki programowalne"						
Assessment methods and criteria	Subject passing criteria		Passing threshold			Percentage of the final grade	
	laboratory		50.0%			60.0%	
	lecture		50.0%			40.0%	

Recommended reading	Basic literature	<ol style="list-style-type: none"> 1. Brzózka J.: Regulatory cyfrowe w automatyce, Wyd. MIKOM, 2002. 2. Brzózka J.: Regulatory i układy automatyki, Wyd. MIKOM, 2004. 3. Kaczorek T.: Teoria układów regulacji automatycznej, WNT, 1974.
	Supplementary literature	<ol style="list-style-type: none"> 1. Osowski S.: Modelowanie układów dynamicznych z zastosowaniem języka SIMULINK, Oficyna Wyd. Politechniki Warszawskiej, Warszawa, 1997.
	eResources addresses	Adresy na platformie eNauczanie:
Example issues/ example questions/ tasks being completed	<p>1 Select the transducer for $4 \pm 20\text{mA}$. The required accuracy is not less than 5%? Assume that the measured size range is chosen properly.</p> <p>2 Explain to concepts of quantization, sampling, discretization.</p> <p>3 Convert given transmittance. The individual steps of transformation provide graphically</p>	
Work placement	Not applicable	