



Subject card

Subject name and code	Computer Adjustment Systems, PG_00049607						
Field of study	Electrical Engineering						
Date of commencement of studies	February 2026		Academic year of realisation of subject		2026/2027		
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 -> Faculties of Gdańsk University of Technology						
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. Seweryn Szultka				
	Teachers		dr inż. Seweryn Szultka				
Lesson types	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	The aim of the course is for students to master regulatory processes, methods of testing basic parameters of the regulation system, issues related to visualization processes and data acquisition.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K7_U10] is able to calculate short-circuit currents, select substation equipment including power system automation protection automatics		Selects automatic control systems for electrical engineering applications.		[SU1] Assessment of task fulfilment		
	[K7_W08] has an extended knowledge of power supply systems power supply and control systems including the use of computer networks and design of these systems in industrial facilities industrial facilities		Performs calculations related to automatic control systems using computer networks.		[SW3] Assessment of knowledge contained in written work and projects		
Subject contents	Course content – lecture 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 archivisation of regulation data. Regulators						
	Course content – laboratory LABORATORIES Programming of the programmable logic controller based on the specified control system. Visualization of the received signal waveforms over time.						
Prerequisites and co-requisites	Ability to programm 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	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. 4. Findeisen W.: Struktury sterowania dla złożonych procesów. Oficyna Wydawnicza Politechniki Warszawskiej, 1997 5. Grega W.: Metody i algorytmy sterowania cyfrowego w układach scentralizowanych i rozproszonych, Wydawnictwo AGH, 2004
	Supplementary literature	1. Osowski S.: Modelowanie układów dynamicznych z zastosowaniem języka SIMULINK, Oficyna Wyd. Politechniki Warszawskiej, Warszawa, 1997. 2. Liu J.: Networked and Distributed Predictive Control: Methods and Nonlinear Process Network Applications, Univeristy of California, Los Angeles, 2011
	eResources addresses	
Example issues/ example questions/ tasks being completed	1 Select the transducer for $4 \div 20\text{mA}$. The required accuracy is not less than 5%? Assume that the measured size range is chosen properly. 2 Explain to concepts of quantization, sampling, discretization. 3 Convert given transmittance. The individual steps of transformation provide graphically	
Practical activites within the subject	Not applicable	

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