GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Computer Adjustment Systems, PG_00050054					
Field of study	Electrical Engineering					
Date of commencement of studies	October 2023		Academic year of realisation of subject		2023/2024	
Education level	second-cycle studies		Subject group		Optional subject group Subject group related to scientific research in the field of study	
Mode of study	Part-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	dr inż. Seweryn Szultka				

Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	10.0	0.0	10.0	0.0	0.0	20
	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	20	4.0	51.0	75

Subject objectives	Discussion of: basic regulatory processes, methods of testing the basic parameters of the control system, issues related to the processes of visualization and data acquisition.

Learning outcomes	Course outcome	Subject outcome	Method of verification
	K7_W09	The student has an expanded knowledge and knows the principles of operation of selected devices included in the power system. The student recognizes the algorithms of control and develops a concept of the control system of a selected device.	[SW1] Assessment of factual knowledge [SW3] Assessment of knowledge contained in written work and projects
	K7_U10	The student is able to determine parameters of a control system depending on depending on the selected system regulation system dedicated to the selected device. Student is able to indicate the phenomena external phenomena affecting operation of the control system, states causing the introduction interference from the side of the power system power system to the control system regulation.	[SU5] Assessment of ability to present the results of task [SU2] Assessment of ability to analyse information
	K7_W08	The student has an in-depth knowledge of of programming programmable controller, which allows for the construction of the indicated control system. The student has knowledge in the field of visualization allowing to operate of the developed control system along with data archiving and editing.	[SW1] Assessment of factual knowledge [SW3] Assessment of knowledge contained in written work and projects

Subject contents	LECTURE The system of regulation of their tasks and structure. Examples of creating block diagrams of selected control objects. Converting flowcharts. Digital control: control methods, digital measuring systems. Visualization and data archiving systems for the control object. LABORATORY Laboratory classes consist of two complementary parts. In the first, the indicated control system is implemented using the programmable controller. In the second part, a visualization application should be developed to support the developed control system as well as to archive and edit data.
Prerequisites and co-requisites	Ability to program PLC controllers. Subject "Programmable controllers"

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
		50.0%	40.0%
		50.0%	60.0%

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.
	Supplementary literature	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	1. 1.Which measuring transducer should be used to obtain the accuracy of not less than 5% for the 4 ÷ 20A range? Assume that the range of the measured quantity has been correctly selected. 2. 2.Explain the concepts of quantization, sampling, discretization 3. 3.Convert the transmittance shown. Please present the individual stages of transformation graphically
Work placement	Not applicable