GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Computer Adjustment Systems, PG_00049607		
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	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	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_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
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_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

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 archivisation 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 archivizing application for created control system.

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
	lecture	50.0%	40.0%
	laboratory	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: KOMPUTEROWE UKŁADY REGULACJI [2023/24] - Moodle ID: 32211 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=32211	
Example issues/ example questions/ tasks being completed	1 Select the **transducer** for 4 ÷ 20**m**A. 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		
Work placement	Not applicable		