GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Analog Control - laboratory, PG_00047591		
Field of study	Automatic Control, Cybernetics and Robotics		
Date of commencement of studies	October 2020	Academic year of realisation of subject	2022/2023
Education level	first-cycle studies	Subject group	Obligatory subject group in the field of study Subject group related to scientific research in the field of study
Mode of study	Full-time studies	Mode of delivery	at the university
Year of study	3	Language of instruction	Polish
Semester of study	5	ECTS credits	2.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Department of Automatic Control -> Faculty of Electronics, Telecommunications and Informatics		
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Piotr Fiertek	
	Teachers	dr inż. Piotr Fiertek dr inż. Tomasz Białaszewski	

Lesson types and methods of instruction

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	0.0	0.0	30.0	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	2.0	18.0	50

Subject objectives

The aim of the course is to familiarize with the practical aspects of control theory

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_U05] can plan and conduct experiments related to the field of study, including computer simulations and measurements; interpret obtained results and draw conclusions	student is able to simulate the operation of a closed control system built on linear and non-linear objects. On this basis, the student is able to conduct experiments related to the selection of the appropriate control algorithm. Student is able to determine the settings of proportional controller, PID controller, LEAD, LEAD-LAG and control system with state feedback.	[SU1] Assessment of task fulfilment
[K6_U06] can analyse the operation of components, circuits and systems related to the field of study, measure their parameters and examine technical specifications	student is able to identify the parameters of models of identified objects and determine the technical characteristics of the control system components and the control object	[SU1] Assessment of task fulfilment
[K6_U21] can individually carry out an analysis of a managing and controlling problem and is able to individually design, tune and operate automatic regulation and control systems, and use computers to control and monitor dynamic systems	student knows the methods of stability tests and synthesis of control systems (linear and nonlinear), can simulate the operation of the control system, can adjustment the PID controllers	[SU1] Assessment of task fulfilment

Subject contents

In the laboratory classes, student has to realize 7 of exercises

Prerequisites and co-requisites

Necessary requirement for taking part in the laboratory classes is pass 'Basics of Automation' and 'Analog Control' courses. Before, the student should master the basics of control theory for linear and nonlinear systems.

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	job processing and reports	50.0%	100.0%
Recommended reading	Basic literature	Course book of Analog Control laboratory.	
	Supplementary literature	Janusz Nowakowski, “Podstawy Automatyki” Tom I i II, Gdańsk 1992r	
	eResources addresses	Adresy na platformie eNauczanie:	
Example issues/ example questions/ tasks being completed			
Work placement	Not applicable		