



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 2021		Academic year of realisation of subject		2023/2024		
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_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		
	[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_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		
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: Sterowanie Analogowe 2023/24 - Moodle ID: 32663 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=32663	
Example issues/ example questions/ tasks being completed			
Work placement	Not applicable		