



## Subject card

Subject name and code	Team Project, PG_00033399						
Field of study	Automation, Robotics and Control Systems						
Date of commencement of studies	February 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	Full-time studies	Mode of delivery			at the university		
Year of study	1	Language of instruction			Polish		
Semester of study	2	ECTS credits			4.0		
Learning profile	general academic profile	Assessment form			assessment		
Conducting unit	Department of Control Systems Engineering -> Faculty of Electrical and Control Engineering						
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Michał Grochowski					
	Teachers						
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	0.0	0.0	60.0	0.0	60
	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	60	15.0		25.0	100	
Subject objectives	The aim of the course is to develop or implement a technical or computer system project jointly by a group of students.						
Learning outcomes	Course outcome	Subject outcome			Method of verification		
	K7_W02	The student is able to use his knowledge of computer science to develop stable and effective control and decision support systems.			[SW1] Assessment of factual knowledge [SW2] Assessment of knowledge contained in presentation		
	K7_U02	The student is able to cooperate in a group in order to achieve a desired goal, achieving it in a timely manner.			[SU5] Assessment of ability to present the results of task [SU1] Assessment of task fulfilment		
	K7_U13	A student is able to critically and objectively assess his work and team partners. The student is able to use the acquired skills in order to solve problems they encounter.			[SU4] Assessment of ability to use methods and tools [SU5] Assessment of ability to present the results of task [SU2] Assessment of ability to analyse information		
Subject contents	Within the course, students jointly carry out a project task which may result in a physical device, a mathematical model, a control or decision making system.						
Prerequisites and co-requisites	no applied						
Assessment methods and criteria	Subject passing criteria	Passing threshold			Percentage of the final grade		
	Timeliness and method of project implementation	50.0%			100.0%		

Recommended reading	Basic literature	<p>1. Byrski W. (2007). Obserwacja i sterowanie w systemach dynamicznych. Uczelniane Wydawnictwa Naukowo Dydaktyczne Akademii Górniczo Hutniczej, Kraków.</p> <p>2. Grega W. (2004). Metody i algorytmy sterowania cyfrowego w układach scentralizowanych i rozproszonych. Uczelniane Wydawnictwa Naukowo Dydaktyczne Akademii Górniczo Hutniczej, Kraków.</p> <p>3. Holejko D., Kościelny W.J. (2012). Automatyka procesów ciągłych. Oficyna Wydawnicza Politechniki Warszawskiej, Warszawa.</p> <p>4. Tatjewski T. (2016). Sterowanie zaawansowane obiektów przemysłowych. Wydanie drugie zmienione. Akademicka Oficyna Wydawnicza EXIT, Warszawa.</p> <p>5. Korbicz Józef , Kościelny Jan M. Modelowanie, diagnostyka i sterowanie nadrzędne procesami. Wydawnictwo Naukowe PWN, 2020.</p>
	Supplementary literature	A. Giuseppe Bonaccorso. Algorytmy uczenia maszynowego. Zaawansowane techniki implementacji. Helion
	eResources addresses	Adresy na platformie eNauczanie:
Example issues/ example questions/ tasks being completed	3D crane control	
Work placement	Not applicable	