



## Subject card

Subject name and code	Team Project, PG_00038284						
Field of study	Automation, Robotics and Control Systems						
Date of commencement of studies	October 2022		Academic year of realisation of subject		2022/2023		
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		4.0		
Learning profile	general academic profile		Assessment form		assessment		
Conducting unit	Department of Control Engineering -> Faculty of Electrical and Control Engineering						
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. Jacek Zawalich				
	Teachers		dr inż. Jacek Zawalich				
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	0.0	0.0	20.0	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		6.0		74.0	100
Subject objectives	The student works out a project in the field of automation and robotics. Uses software, hardware necessary to implement the project, catalogs and other sources to select equipment. Combines knowledge from various fields of technique. Accepts work in a group.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	K7_U13		The student knows and understands the rules of teamwork, improving professional, personal and social competences, is aware of the responsibility for his own work and in the team, has the ability to present the results of the task.		[SU5] Assessment of ability to present the results of task		
	K7_U02		Student individually and in group carries out work using the knowledge of various professional environments.		[SU1] Assessment of task fulfilment		
	K7_W01		Student identifies and classifies complex technical objects. Student presents the methods of modeling, identification and verification of complex physical objects for design aim.		[SW1] Assessment of factual knowledge		
Subject contents	Solving a complex problem in the field of automation and / or robotics. Depending on the task carried out, the development of control algorithms, design and implementation of a selected automation or robotics system. Solving construction and technical problems from automation or robotics, designing control systems, including alarm and security systems.						
Prerequisites and co-requisites	Knowledge from the Basics of Control Engineering						
Assessment methods and criteria	Subject passing criteria		Passing threshold		Percentage of the final grade		
	Project		60.0%		100.0%		

Recommended reading	Basic literature	<ol style="list-style-type: none"> <li>1. Kaczorek T., Dzieliński A., Dąbrowski W. : Podstawy teorii sterowania. WNT Warszawa 2006.</li> <li>2. Dębowski A. : Automatyka - podstawy teorii dla praktyków. WNT Warszawa 2008.</li> <li>3. Mikulczyński T., Samsonowicz Z., Więclawek R. : Automatyzacja procesów produkcyjnych. WNT Warszawa 2015.</li> <li>4. Tatjewski P.: Sterowanie zaawansowane obiektów przemysłowych. Struktury i algorytmy. EXIT Warszawa 2016.</li> <li>5. Goodwin GC., Graebe S.F., Salgado M.E.: Control Systems Design, Prentice Hall. 2001.</li> </ol>
	Supplementary literature	<ol style="list-style-type: none"> <li>1. Ogata K.: Modern Control Engineering. 4th edition. Prentice Hall 2002.</li> <li>2. Piegat A.: Modelowanie i sterowanie rozmyte. Warszawa, EXIT, 1999.</li> </ol>
	eResources addresses	Adresy na platformie eNauczanie:
Example issues/ example questions/ tasks being completed	Realization of partial phases of the project. Final presentation of the project.	
Work placement	Not applicable	