



Subject card

Subject name and code	Automation and robotics, PG_00023322						
Field of study	Medical and Mechanical Engineering, Medical and Mechanical Engineering						
Date of commencement of studies	October 2020	Academic year of realisation of subject			2021/2022		
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	2	Language of instruction			Polish		
Semester of study	3	ECTS credits			2.0		
Learning profile	general academic profile	Assessment form			assessment		
Conducting unit	Department of Mechanics and Mechatronics -> Faculty of Mechanical Engineering and Ship Technology						
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. Wiktor Sieklicki				
	Teachers		dr inż. Wiktor Sieklicki				
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	15.0	0.0	0.0	0.0	30
	E-learning hours included: 0.0						
Automatyka i Robotyka I - W/Ć, IM-M, sem. 3, (PG_00023322) - Moodle ID: 18645 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=18645							
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		3.0		17.0	50
Subject objectives	To present automation systems and control algorithms in mechanical systems. Knowing the structure and components of a typical control system. Gaining general information about the methods of designing, analysis and study of the properties of typical control systems. Learning about methods of modeling, analysis and control of automation systems						
Learning outcomes	Course outcome	Subject outcome			Method of verification		
	K6_U05	Student is able to define standard occurrences in automatics systems and control.			[SU3] Assessment of ability to use knowledge gained from the subject		
	K6_W06	Student is able to propose a proper logic circuit			[SW3] Assessment of knowledge contained in written work and projects		
	K6_U04	Student is able to propose a proper automatics elements as in control theory			[SU4] Assessment of ability to use methods and tools		
	K6_U07	Student is able to design simple automatics systems			[SU2] Assessment of ability to analyse information [SU3] Assessment of ability to use knowledge gained from the subject		
Subject contents	<ul style="list-style-type: none">• number systems,• design and analysis of logic control systems• transfer function• automatic control system components• Laplace transformation• standard signals in automatics• standard control system elements• block diagrams• stability, stability conditions and criteria						
Prerequisites and co-requisites	Mathematics in scope of algebra, matrices, derivative equations						

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
		56.0%	100.0%
Recommended reading	Basic literature	1. Węgrzyn S.: Podstawy automatyki. PWN Warszawa, 1980. 2. Perycz S.: Podstawy automatyki. Skrypt PG. Gdańsk 1983 3. Mostowski A. Algebry boolea i ich zastosowanie 4. Holejko D., Kościelny W.J.: Automatyka procesów ciągłych, Oficyna Wydawnicza Politechniki Warszawskiej, 2012 5. Barski M, Jędruch W. Układy cyfrowe i mikroprocesorowe zadania	
	Supplementary literature	1. Pełczewski W.: Teoria sterowania. Ciągłe stacjonarne układy liniowe. WT Warszawa 1980. 2. Kaczorek T.: Teoria sterowania, tom.1. PWN Warszawa 1977.	
	eResources addresses		
Example issues/ example questions/ tasks being completed	<p>Reduce a logic function to the simplest form and propose a logic circuit for realization of the function</p> <p>Calculate Laplace function of a signal given as a plot</p> <p>Define movement equations for a mechanical object</p>		
Work placement	Not applicable		