



Subject card

Subject name and code	Control and Monitoring of Processes, PG_00064541						
Field of study	Automatic Control, Cybernetics and Robotics						
Date of commencement of studies	February 2026		Academic year of realisation of subject		2026/2027		
Education level	second-cycle studies		Subject group		Optional subject group Specialty 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		2.0		
Learning profile	general academic profile		Assessment form		assessment		
Conducting unit	Department Of Automatic Control -> Faculty Of Electronics Telecommunications And Informatics -> Wydziały Politechniki Gdańskiej						
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. Piotr Kaczmarek				
	Teachers		dr inż. Piotr Kaczmarek dr inż. Piotr Fiertek				
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	0.0	15.0	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		4.0		16.0	50
Subject objectives	Introduction for automation of technological processes						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K7_U09] can carry out a critical analysis of the functioning of existing technical solutions and assess these solutions, as well as apply experience related to the maintenance of advanced technical systems, devices and facilities typical for the field of studies, gained in the professional engineering environment		The student can design IT systems supporting business and production processes		[SU1] Assessment of task fulfilment		
	[K7_W03] knows and understands, to an increased extent, the construction and operating principles of components and systems related to the field of study, including theories, methods and complex relationships between them and selected specific issues - appropriate for the curriculum		Student can analyze complex production processes.		[SW1] Assessment of factual knowledge		
Subject contents	1. Definition of mechanization and automation 2. Benefits of automation 3. Factors of automation 4. Automation in a machine-building industry 5. Production techniques in a machine-building industry 6. Components of manufacturing process 7. Automation of a simple manufacturing cycle 8. Automation of a machine feeding process 9. Automation of a workshop transport 10. Automation of an assembly process 11. Numerically controlled machine tools 12. Robots in automatic production processes 13. Quality control in automatic manufacturing systems 14. Computer aided design in automatic manufacturing systems 15. CRM/ MRP/ERP systems 16. CAD/CAM/CAE software 17. Automation in chemical industry 18. Control of heat and mass transfer processes 19. Design of control systems for chemical reactions 20. Automation of rectification and distillation processes						

Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Written test	51.0%	30.0%
	Project	51.0%	40.0%
	Seminar	51.0%	30.0%
Recommended reading	Basic literature	B. Roffel, B. Betlem "Process Dynamics and Control" Wiley 2006 M. Piekarski, M. Poniewski "Dynamika i sterowanie procesami wymiany ciepła i masy" Warszawa WNT, 1994	
	Supplementary literature	No requirements	
	eResources addresses	Adresy na platformie eNauczanie:	
Example issues/ example questions/ tasks being completed			
Work placement	Not applicable		

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