



## Subject card

Subject name and code	Computer Networks in Robotics, PG_00038330						
Field of study	Automation, Robotics and Control Systems						
Date of commencement of studies	October 2024	Academic year of realisation of subject			2025/2026		
Education level	second-cycle studies	Subject group			Specialty 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	2	Language of instruction			Polish		
Semester of study	3	ECTS credits			3.0		
Learning profile	general academic profile	Assessment form			assessment		
Conducting unit	Faculty of Electrical and Control Engineering						
Name and surname of lecturer (lecturers)	Subject supervisor		prof. dr hab. inż. Grzegorz Redlarski				
	Teachers						
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	10.0	0.0	10.0	0.0	0.0	20
	E-learning hours included: 0.0						
	Adresy na platformie eNauczanie:						
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		7.0		48.0	75
Subject objectives	The aim of the course is an acquisition of the knowledge skills and competences in the field of design, administration and maintenance of computer networks used, among others, in industrial distributed systems.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K7_W08] has in-depth knowledge of program development and design of complex systems automation systems using PLC and SCADA, transmission and processing of signals occurring in a variety of physical objects						
	[K7_K02] can interact and work in a group assuming various roles and identify priorities for the achievement of a specific task		The student has the ability to perform tasks that are part of a complex system		[SK2] Assessment of progress of work		
	[K7_U07] is able to use analytical, simulation and experimental methods to formulate and solve engineering tasks and simple research problems in the field of automation and robotics		The student is able to use specialized computer tools supporting the solution of a specific task		[SU1] Assessment of task fulfilment		

Subject contents	1. Models of the computer networks  2. The physical and logical topologies of computer networks 4. Network and subnetworks  3. Power distributed computer systems  4. The tools to the support of the process of computer systems designing		
Prerequisites and co-requisites	The basic knowledge of numeral systems (binary, decimal, hexal and octal).		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Test - lecture part	60.0%	50.0%
	Laboratory report	60.0%	50.0%
Recommended reading	Basic literature	[1] Cisco Networking Academy program, CCNA 1 and 2 Companion Guide, 3 <sup>rd</sup> Edition. Cisco Systems Inc., 2004.	
	Supplementary literature	[1] Cisco Networking Academy program CCNA 3 and 4 Companion Guide, 3 <sup>rd</sup> Edition. Cisco Systems Inc., 2004.	
	eResources addresses		
Example issues/ example questions/ tasks being completed	1. Similarities and differences between models: OSI and TCP/IP  2. Basic networking devices - the essence of an action  3. The physical topology of computer networks  4. The logical topology of computer networks  5. The essence of the division of the networks into subnetworks		
Work placement	Not applicable		

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