



Subject card

Subject name and code	Engineering of Alarm Systems, PG_00038448						
Field of study	Electrical Engineering						
Date of commencement of studies	October 2024		Academic year of realisation of subject		2026/2027		
Education level	first-cycle studies		Subject group				
Mode of study	Full-time studies		Mode of delivery		at the university		
Year of study	3		Language of instruction		Polish		
Semester of study	5		ECTS credits		2.0		
Learning profile	general academic profile		Assessment form		assessment		
Conducting unit	Department of Metrology and Information Systems -> Faculty of Electrical and Control Engineering						
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. Ariel Dzwonkowski				
	Teachers						
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	15.0	0.0	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		2.0		18.0	50
Subject objectives	The aim of the course is to provide the student with knowledge on issues related to the construction and operation of alarm systems. The student will gain knowledge on devices and components used in intruder and hold-up alarm systems, access control, fire alarm systems and CCTV. The student will learn about system topologies and how to configure and program devices.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	K6_K02		The student works in a group.		[SK4] Assessment of communication skills, including language correctness [SK1] Assessment of group work skills [SK3] Assessment of ability to organize work		
	K6_W10		Defines the operating principles of basic alarm system devices. Defines the construction and operation of alarm control panels and selects appropriate devices for use in intruder and hold-up alarm systems. Connects the main power supply and selects a battery for backup power. Configures and programs alarm system devices.		[SW1] Assessment of factual knowledge		
	K6_U05		Defines the purpose of individual alarm systems and determines the operating principle of devices and system elements. Correctly installs, starts, configures and programs alarm systems.		[SU2] Assessment of ability to analyse information [SU1] Assessment of task fulfilment [SU4] Assessment of ability to use methods and tools		

Subject contents	<p>LECTURE Review of alarm devices and systems. Alarm control panels - construction, operating principle, programming and configuration using additional modules. Detectors - types, operating principles. Signals and notification devices. Intruder and hold-up alarm systems - device selection principles, security levels. Access control systems - device review, selection principles. Notification devices - GSM, Ethernet. Wireless systems. CCTV systems - solution review, device parameters, system configuration. LABORATORY Programming and start-up of CA-10 alarm control panels, INTEGRA series, VERSA series and PERFECTA. Connection, programming and start-up of additional modules of the access control system, ABAX wireless system. Practical verification of the correctness of the configuration, connection and programming of alarm systems.</p>		
Prerequisites and co-requisites	Basic knowledge of electrical engineering. Ability to connect electrical and electronic circuits.		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Laboratory - grades obtained during classes and points from reports.	60.0%	40.0%
	Lecture - two colloquia during the semester, each 15 minutes long.	60.0%	60.0%
Recommended reading	Basic literature	<p>1. Mikulik, Jerzy: Podstawowe systemy bezpieczeństwa w budynkach inteligentnych, Wydawnictwo Politechniki Śląskiej, Gliwice 2005.</p> <p>2. Wójcik, Andrzej: Mechaniczne i elektroniczne systemy zabezpieczeń. Fachowy poradnik dla: projektantów, instalatorów, producentów, inwestorów, agencji ochrony mienia, użytkowników. Wydawnictwo Verlag Dashofer, 2001.</p> <p>3. Brzęcki Mariusz: Elektroniczne systemy ochrony osób i mienia. Poradnik praktyczny, 2013, ISBN 9788362760527.</p> <p>4. Siudalski Stefan Jerzy: Przepisy i normy elektryczne - monitoring i systemy alarmowe, Wiedza i Praktyka, 2014.</p>	
	Supplementary literature	<p>1. Mirosław Parol, Łukasz Rokicki, instalacje i systemy w inteligentnych budynkach laboratorium, Politechnika Warszawska, 2017.</p> <p>2. Materiały szkoleniowe firmy SATEL, www.satel.pl.</p>	
	eResources addresses	Adresy na platformie eNauczanie:	

<p>Example issues/ example questions/ tasks being completed</p>	<ol style="list-style-type: none"> 1. Construction and operating principle of PIR sensors. 2. Construction and operating principle of dual motion sensors. 3. List the functions performed by the alarm control panel. 4. Present the types of backup power supplies used in alarm systems. 5. Present the definition of an alarm system. 6. Describe the classes of alarm systems. 7. What are manipulators used for in alarm systems? 8. What functions does a video matrix switch perform? 9. Present the access classes in access control systems. 10. What types of cameras are used in CCTV systems?
<p>Work placement</p>	<p>Not applicable</p>

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