



Subject card

Subject name and code	Alarm Systems Engineering, PG_00059228						
Field of study	Automation, Robotics and Control Systems						
Date of commencement of studies	February 2024	Academic year of realisation of subject			2024/2025		
Education level	second-cycle studies	Subject group					
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			3.0		
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		dr inż. Ariel Dzwonkowski				
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	15.0	15.0	0.0	45
	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	45		6.0		24.0	75
Subject objectives	The aim of the course is to familiarize students with the subject of Intruder Alarms, Access Control Systems and CCTV.						
Learning outcomes	Course outcome	Subject outcome			Method of verification		
	K7_U01	The student explains the principles of operation of the basic devices of burglary and assault signalling systems. The student describes the structure and operation of alarm control panels and selects appropriate devices for use in burglary and assault signalling systems. The student discusses the purpose and principle of operation of the monitoring system.			[SU2] Assessment of ability to analyse information		
	K7_W13	The student configures and programs the devices of the intruder alarm system. The student presents the purpose and lists the types of basic notification systems. The student correctly installs, starts, configures and programs simple alarm systems. The student designs an alarm system for a small facility. The student explains the purpose of CCTV systems and describes the principle of operation of CCTV system devices. The student makes a project of an electronic hazard signalling system.			[SW1] Assessment of factual knowledge		

Subject contents	<p>LECTURE: Review of alarm devices and systems. Detectors - types, principles of operation. Signalling devices and notification devices. Burglary and assault signalling systems - rules for selecting devices, security levels. Access control systems - review of devices, rules of selection. Alarm control panels - construction, principle of operation, programming and configuration with the use of additional modules. Remote control of alarm systems operation. Notification devices - GSM, Ethernet. Monitoring station - construction, principle of operation, transmission channels, software. Wireless systems - rules for selecting devices, system configuration. Reliability of transmission - distorted and undistorted signals. CCTV systems - overview of solutions, device parameters, configuration and optimization of the system.</p> <p>LABORATORY: Programming and starting the CA 5, CA-6, CA-10, INTEGRA series, VERSA and PERFECTA series alarm control panels. Connecting, programming and starting the ACCO access control system and the ABAX wireless system. Practical verification of the correctness of configuration, connection and programming of alarm systems.</p> <p>PROJECT: Implementation of the project of the Burglary and Assault Signalling System along with elements of the CCTV System, Fire Signalling System and / or Access Control System.</p>														
Prerequisites and co-requisites	Basic knowledge of electrical engineering. Ability to connect electrical and electronic circuits.														
Assessment methods and criteria	<table border="1" data-bbox="448 719 1493 857"> <thead> <tr> <th data-bbox="448 719 794 757">Subject passing criteria</th> <th data-bbox="794 719 1141 757">Passing threshold</th> <th data-bbox="1141 719 1493 757">Percentage of the final grade</th> </tr> </thead> <tbody> <tr> <td data-bbox="448 757 794 786">Laboratory exercises</td> <td data-bbox="794 757 1141 786">60.0%</td> <td data-bbox="1141 757 1493 786">30.0%</td> </tr> <tr> <td data-bbox="448 786 794 815">Project</td> <td data-bbox="794 786 1141 815">60.0%</td> <td data-bbox="1141 786 1493 815">30.0%</td> </tr> <tr> <td data-bbox="448 815 794 857">Tests during the semester</td> <td data-bbox="794 815 1141 857">60.0%</td> <td data-bbox="1141 815 1493 857">40.0%</td> </tr> </tbody> </table>			Subject passing criteria	Passing threshold	Percentage of the final grade	Laboratory exercises	60.0%	30.0%	Project	60.0%	30.0%	Tests during the semester	60.0%	40.0%
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Recommended reading	Basic literature	<p>1. Mikuliak, Jerzy: Podstawowe systemy bezpieczeństwa w budynkach inteligentnych, Wydawnictwo Politechniki Śląskiej, Gliwice 2005.</p> <p>2. Mechaniczne i elektroniczne systemy zabezpieczeń. Fachowy poradnik dla: projektantów, instalatorów, producentów, inwestorów, agencji ochrony mienia, użytkowników. Zespół autorów pod redakcją dr inż. Andrzeja Wójcika.</p> <p>3. Teaching materials Satel Sp. z o.o.</p>													
	Supplementary literature	1. Stefan Jerzy Siudalski: Przepisy i normy elektryczne - monitoring i systemy alarmowe, Wydawnictwo Oficyna Prawa Polskiego, 2014.													
	eResources addresses	Adresy na platformie eNauczenie: INŻYNIERIA ZABEZPIECZEŃ [ARiSS][2024/25] - Moodle ID: 39809 https://enauczenie.pg.edu.pl/moodle/course/view.php?id=39809													
Example issues/ example questions/ tasks being completed	<ol style="list-style-type: none"> 1. What is an alarm system? 2. Construction and operation of motion detectors. 3. What functions does the control panel perform? 4. How should signalling devices be installed? 5. What is an Access Control System? 6. What devices are included in the Access Control System? 7. What types of cameras are used in CCTV systems? 8. What connection configurations can devices connected to the closed-circuit TV system operate in? 														
Work placement	Not applicable														

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