



## 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 2023		Academic year of realisation of subject		2023/2024		
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><tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr><tr><td>Tests during the semester</td><td>60.0%</td><td>40.0%</td></tr><tr><td>Project</td><td>60.0%</td><td>30.0%</td></tr><tr><td>Laboratory exercises</td><td>60.0%</td><td>30.0%</td></tr></table>			Subject passing criteria	Passing threshold	Percentage of the final grade	Tests during the semester	60.0%	40.0%	Project	60.0%	30.0%	Laboratory exercises	60.0%	30.0%
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Recommended reading	<p>Basic literature</p> <p>Supplementary literature</p> <p>eResources addresses</p>	<p>1. Mikulik, 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> <p>1. Stefan Jerzy Siudalski: Przepisy i normy elektryczne - monitoring i systemy alarmowe, Wydawnictwo Oficyna Prawa Polskiego, 2014.</p> <p>Adresy na platformie eNauczanie: INŻYNIERIA ZABEZPIECZEŃ [2023/24] - Moodle ID: 32235 <a href="https://enauczanie.pg.edu.pl/moodle/course/view.php?id=32235">https://enauczanie.pg.edu.pl/moodle/course/view.php?id=32235</a></p>													
Example issues/ example questions/ tasks being completed	<ol style="list-style-type: none"><li>1. What is an alarm system?</li><li>2. Construction and operation of motion detectors.</li><li>3. What functions does the control panel perform?</li><li>4. How should signalling devices be installed?</li><li>5. What is an Access Control System?</li><li>6. What devices are included in the Access Control System?</li><li>7. What types of cameras are used in CCTV systems?</li><li>8. What connection configurations can devices connected to the closed-circuit TV system operate in?</li></ol>														
Work placement	Not applicable														