GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Engineering of Alarm Systems, PG_00038448		
Field of study	Electrical Engineering		
Date of commencement of studies	October 2021	Academic year of realisation of subject	2023/2024
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	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	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

To introduce students to issues related to the construction and operation of alarm systems.

Learning outcomes

Course outcome	Subject outcome	Method of verification
K6_W10	The student explains the principles of operation of the basic devices of burglary and assault detection systems. The student describes the structure and operation of alarm control panels and selects appropriate devices for use in burglary and attack detection systems. The student connects the main power supply and selects a battery for the backup power supply. The student configures and programs burglary and assault detection system devices. The student presents the purpose and lists the types of basic notification systems.	[SW1] Assessment of factual knowledge
K6_U05	The student correctly installs, starts, configures and programs simple alarm systems. The student explains the purpose of CCTV systems and describes the principle of operation of CCTV system devices.	[SU1] Assessment of task fulfilment [SU4] Assessment of ability to use methods and tools [SU2] Assessment of ability to analyse information
K6_K02	The student is able to work in a group.	[SK3] Assessment of ability to organize work [SK2] Assessment of progress of work [SK4] Assessment of communication skills, including language correctness [SK1] Assessment of group work skills

<table>
<tr><td>Subject contents</td><td>LECTURE An overview of alarming systems devices. Detectors - types, principles of operation. Sirens and equipment for notification. Alarm systems - rules for the selection of equipment, levels of security. Access control systems - an overview of devices, principles of selection. Control panels - construction, principle of operation, programming and configuration using external devices. Remote controling the operations of alarming systems. Notification devices - GSM, Ethernet. Monitoring stations - construction, working principles, transmission channels, the software. Wireless systems - rules for the selection of equipment, systems configuration. Transmission Reliability. CCTV systems - overview of solutions, device parameters, system configuration and optimization.
LABORATORY EXERCISES Programming and running of control panels CA-10, INTEGRA, VERSA and PERFECTA series. Connection, programming and running of ACCO access control system and wireless system ABAX. Practical verification of the configuration, connection and programming of alarm systems.</td></tr>
<tr><td>Prerequisites and co-requisites</td><td>Knowledge of electronic and electrical devices Ability to connect electrical and electronic circuits.</td></tr>
<tr><td>Assessment methods and criteria</td><td>
<table>
<tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr>
<tr><td>Laboratory - the marks obtained during the course and points of reports</td><td>60.0%</td><td>40.0%</td></tr>
<tr><td>Lecture - two tests during the semester, each of 45 minutes</td><td>60.0%</td><td>60.0%</td></tr>
</table>
</td></tr>
<tr><td>Recommended reading</td><td>
<table>
<tr><td>Basic literature</td><td>1. Mikulik, Jerzy: Podstawowe systemy bezpieczeństwa w budynkach inteligentnych, Wydawnictwo Politechniki Śląskiej, Gliwice 2005.
2. Wójcik, Andrzej: Mechaniczne i elektroniczne systemy zabezpieczeń. Fachowy poradnik dla: projektantów, instalatorów, producentów, inwestorów, agencji ochrony mienia, użytkowników.</td></tr>
<tr><td>Supplementary literature</td><td>1. SATEL training materials.</td></tr>
<tr><td>eResources addresses</td><td>Adresy na platformie eNauczanie:
INŻYNIERIA SYSTEMÓW ALARMOWYCH [2023/24] - Moodle ID: 32137
https://enauczanie.pg.edu.pl/moodle/course/view.php?id=32137</td></tr>
</table>
</td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td>1. Construction and operation of PIR detectors.
2. Construction and operation of dual motion detectors.
3. Replace the functions performed by the control panel.
4. Introduce types of power reserve for use in alarm systems.
5. Introduce the definition of the alarm system.
6. Describe the class of alarm systems.
7. What are the manipulators in alarm systems?
8. What is the function performs matrix switcher?
9. Introduce access class access control systems.
10. What types of cameras are used in CCTV systems?</td></tr>
<tr><td>Work placement</td><td>Not applicable</td></tr>
</table>