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 2025	Academic year of realisation of subject	2027/2028
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	Partment Of Metrology And Information Systems -> Faculty Of Electrical And Control Engineering -> Wydziały Politechniki Gdańskiej		
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_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.	[SU4] Assessment of ability to use methods and tools [SU1] Assessment of task fulfilment [SU2] Assessment of ability to analyse information
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_K02	The student works in a group.	[SK3] Assessment of ability to organize work [SK1] Assessment of group work skills [SK4] Assessment of communication skills, including language correctness

Subject contents	**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.
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
Lecture - two colloquia during the semester, each 15 minutes long.	60.0%	60.0%
Laboratory - grades obtained during classes and points from reports.	60.0%	40.0%

Recommended reading

Basic literature	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. Wydawnictwo Verlag Dashofer, 2001. 3. Brzęcki Mariusz: Elektroniczne systemy ochrony osób i mienia. Poradnik praktyczny, 2013, ISBN 9788362760527. 4. Siudalski Stefan Jerzy: Przepisy i normy elektryczne - monitoring i systemy alarmowe, Wiedza i Praktyka, 2014.
Supplementary literature	1. Mirosław Parol, Łukasz Rokicki, instalacje i systemy w inteligentnych budynkach laboratorium, Politechnika Warszawska, 2017. 2. Materiały szkoleniowe firmy SATEL, www.satel.pl.
eResources addresses	Adresy na platformie eNauczanie:

Example issues/ example questions/ tasks being completed	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?
Work placement	Not applicable

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