POZNAN UNIVERSITY OF TECHNOLOGY

EUROPEAN CREDIT TRANSFER AND ACCUMULATION SYSTEM (ECTS)

COURSE DESCRIPTION CARD - SYLLABUS

Course name
Property security techniques [S2Eltech2-UEPP>TZM]

Course

Field of study	Year/Semester
Electrical Engineering	2/3
Area of study (specialization)	Profile of study
Electrical Systems in Industry and Vehicles	general academic
Level of study	Course offered in
second-cycle	Polish
Form of study	Requirements
full-time	compulsory

Number of hours

Lecture	Laboratory classes	Other
0	0	0

Tutorials	Projects/seminars
0	15

Number of credit points

1,00

Coordinators	Lecturers
dr inż. Grzegorz Trzmiel grzegorz.trzmiel@put.poznan.pl	

Prerequisites

Basic knowledge in the field of electrical engineering, electronics and computer science, including in installations. Ability to understand and interpret knowledge provided in class. The ability to effectively self-study in a field related to the chosen field of study. Awareness of the need to expand their competences, readiness to cooperate within a team.

Course objective

Extended knowledge of theoretical and practical problems related to the construction of elements, sub-assemblies and systems for modern property and people security.

Course-related learning outcomes

Knowledge:
1. has extended knowledge in the field of construction and design of complex microprocessor systems, in particular for the purposes of measurement and control,
2. has knowledge of the possibilities and limitations of the methods used in computer aided design in electrical engineering.

Skills:
1. is able to apply knowledge in the field of cooperation of property security systems with other installations,
2. is able to formulate and solve tasks related to modeling and designing of electrical components, devices and systems as well as designing the process of their production.

Social competences:
1. is able to think and act in an entrepreneurial manner in the field of analyzing systems and systems in buildings.

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Project classes are assessed on the basis of: rewarding the knowledge necessary to implement the problems posed in a given area of project tasks, continuous assessment, during each class - rewarding the increase in the ability to use known principles and methods, assessment of knowledge and skills related to the implementation of the project task.
Students can get extra points for activity during classes, and in particular for: proposing discussion of additional aspects of the problem, effectiveness of applying the acquired knowledge when solving a given problem, comments related to the improvement of teaching materials, aesthetic care of the developed tasks within self-study.

Programme content

The module program covers issues related to the construction, principles of operation, use and principles of design and programming of alarm systems.

Course topics

The project class program covers the following topics:
1. Operation and programming of the Satel system with the Perfecta 16-WRL control panel
2. Operation and programming of the Satel system with the INTEGRA 32 control panel
3. Operation and programming of the Satel system with the Perfecta 16 control panel
Design of alarm and property protection systems. Implementation examples. Classes at the university on real models of alarm systems, supplemented with materials enabling independent preparation
for classes and expanding knowledge. The latest system solutions (hardware and software) regarding the subject of classes are used.

Teaching methods

Projects: The use of computer equipment with a multimedia projector, didactic stations (alarm systems mockups) and dedicated software for designing property security systems. Realization of projects in various hardware configurations: selection of elements, development of control algorithms, software, testing, preparation of project documentation. Practical classes at the university supplemented with materials for independent performance of tasks on the free software packages available.

Bibliography

Basic:
1. Stanisławek R., Integracja systemów bezpieczeństwa w obiekcie, Systemy Alarmowe, 2002.
2. Markiewicz H., Instalacje elektryczne, Wydawnictwo Naukowo-Techniczne, Warszawa, 2006.
3. Petykiewicz P., Nowoczesna instalacja elektryczna w inteligentnym budynku, COSiW SEP, Warszawa, 2001.
4. Honey G., Intruder Alarms 3rd Edition, Newnews, 2007.
5. Thomas L. Norman, Integrated Security Systems Design: A Complete Reference for Building Enterprise-Wide Digital Security Systems 2nd Edition, Butterworth-Heinemann, 2014.
6. Current list of standards, industry regulations and studies.

Additional:
1. Nawrocki W., Sensory i systemy pomiarowe, Wydawnictwo Politechniki Poznańskiej, Poznań, 2006.
2. Ciszewski J., Nowe trendy w konstrukcji czujek pożarowych, Instytut Techniki Budowlanej, Warszawa

2012.
3. Głuchy D., Kurz D., Trzmiel G., Aspekty projektowania i eksploatacji systemów przeciwpożarowych w obiektach przemysłowych, Computer applications in electrical engineering vol. 79/2014, Poznan University of Technology Academic Journals – Electrical Engineering, Poznań, 2014, str. 149 – 156.
4. Piasecki A., Trzmiel G., Remote building control using the bluetooth technology, Monograph Computer Applications in Electrical Engineering, Poznan University of Technology 2016, vol. 14, pp. 457 – 468.
5. Internet: specialist subject literature, datasheets, standards.

Breakdown of average student's workload

	Hours	ECTS
Total workload	25	1,00
Classes requiring direct contact with the teacher	15	0,50
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	10	0,50