

STUDY MODULE DESCRIPTION FORM		
Name of the module/subject Intelligent building		Code 1010324391010306003
Field of study Electrical Engineering	Profile of study (general academic, practical) (brak)	Year /Semester 5 / 9
Elective path/specialty Electrical and Computer Systems in	Subject offered in: Polish	Course (compulsory, elective) obligatory
Cycle of study: First-cycle studies	Form of study (full-time, part-time) part-time	
No. of hours Lecture: 9 Classes: - Laboratory: - Project/seminars: 18		No. of credits 3
Status of the course in the study program (Basic, major, other) (brak)		(university-wide, from another field) (brak)
Education areas and fields of science and art technical sciences Technical sciences		ECTS distribution (number and %) 3 100% 3 100%
Responsible for subject / lecturer: mgr inż. Dariusz Kurz email: dariusz.kurz@put.poznan.pl tel. 061 6652840 Wydział Elektryczny ul. Piotrowo 3A 60-965 Poznań		
Prerequisites in terms of knowledge, skills and social competencies:		
1	Knowledge	Basic knowledge of electrical engineering, electronics and information technology, including building systems.
2	Skills	The ability to understand and interpret knowledge conveyed in the classroom. Ability to effectively self-education in a field related to the chosen field of study.
3	Social competencies	Is aware of the need to broaden their competence, willingness to work together as a team.
Assumptions and objectives of the course: In-depth knowledge of the theoretical and practical problems associated with the construction of components, subassemblies and systems of modern buildings "smart".		
Study outcomes and reference to the educational results for a field of study		
Knowledge: 1. Describe the construction and operation of the basic elements and components of microprocessor and electrical equipment in buildings and prepare the selected system design methodology - [K_W08 +, K_W10++] 2. Explain the operation of building energy systems, microprocessor and computer - [K_W14+]		
Skills: 1. Apply the knowledge in the scope of electric and computer theories of arrangements in buildings in order to carry documentation out of performance of a task engineering - [K_U07+++ , K_U12+] 2. Obtain information from the literature and the Internet, work individually, independently solve problems in the theory of analysis and design of systems and equipment in the construction industry - [K_U17++]		
Social competencies: 1. Able to think and act in an entrepreneurial manner in the area of systems analysis and systems in buildings - [K_K04++]		
Assessment methods of study outcomes		

<p>Lecture:</p> <ul style="list-style-type: none"> - assess the knowledge and skills listed on the completion of the writing. <p>Exercise Design:</p> <ul style="list-style-type: none"> - test and favoring knowledge necessary for the accomplishment of the problems in the area of design tasks, - continuous evaluation for each course - rewarding gain skills they met the principles and methods, - assessment of knowledge and skills related to the implementation of the project tasks. <p>Get extra points for the activity in the classroom, and in particular for:</p> <ul style="list-style-type: none"> - propose to discuss additional aspects of the subject, - the effectiveness of the application of the knowledge gained during solving the given problem, - subsequent to the improvement of teaching materials, - developed aesthetic care tasks - in the self-study. 		
Course description		
<p>Lecture: Historical Overview. International Standards of building automation. Ways to transfer information in intelligent buildings - EIB (European Installation Bus) / KNX, philosophy, components, operation, alternative ways to transfer information in intelligent buildings. The structure of the installation ? BMCS (Building Management and Control System). The economics of building installations.</p> <p>Project: Implementation of the goals set design mockups on a real chosen system in the laboratory.</p>		
Basic bibliography:		
<ol style="list-style-type: none"> 1. Niezabitowska E.: Budynek inteligentny. Tom I: Potrzeby użytkownika a standard budynku inteligentnego, Wyd. Politechniki Śląskiej, Gliwice 2010. 2. Mikulik J.: Budynek inteligentny. Tom II: Podstawowe systemy bezpieczeństwa w budynkach inteligentnych, Wyd. Politechniki Śląskiej, Gliwice 2005. 3. Mikulik J.: Inteligentne budynki: Teoria i praktyka, Kraków: Oficyna Wydawnicza, 2010. 4. Borkowski P.: Podstawy integracji systemów zarządzania w obrębie obiektu, WNT, 2009. 5. Nawrocki M.: ?Europejska magistrala instalacyjna EIB?. 		
Additional bibliography:		
<ol style="list-style-type: none"> 1. http://www.knx.org 2. http://www.emiter.net 3. http://www.smartech.com.pl 4. Prace dyplomowe IEiEP. 5. Czasopismo ?Inteligentny budynek? 		
Result of average student's workload		
Activity	Time (working hours)	
1. Participation in lecture classes	9	
2. Participation in design classes	18	
3. Participation in consultation concerning the lecture	3	
4. Participation in consultation concerning the project	3	
5. Preparation for the test/exam	33	
6. Test/exam	3	
7. Preparing the design description	20	
Student's workload		
Source of workload	hours	ECTS
Total workload	89	3
Contact hours	36	1
Practical activities	41	2