

<b>STUDY MODULE DESCRIPTION FORM</b>		
Name of the module/subject <b>Intelligent building</b>		Code <b>1010324291010306003</b>
Field of study <b>Electrical Engineering</b>	Profile of study (general academic, practical) <b>general academic</b>	Year /Semester <b>5 / 9</b>
Elective path/specialty <b>Electrical and Computer Systems in</b>	Subject offered in: <b>Polish</b>	Course (compulsory, elective) <b>obligatory</b>
Cycle of study: <b>First-cycle studies</b>	Form of study (full-time, part-time) <b>part-time</b>	
No. of hours Lecture: <b>9</b> Classes: <b>-</b> Laboratory: <b>-</b> Project/seminars: <b>18</b>		No. of credits <b>4</b>
Status of the course in the study program (Basic, major, other) <b>other</b>		(university-wide, from another field) <b>university-wide</b>
Education areas and fields of science and art <b>technical sciences</b> <b>Technical sciences</b>		ECTS distribution (number and %) <b>4 100%</b> <b>4 100%</b>
<b>Responsible for subject / lecturer:</b>  mgr inż. Dariusz Kurz email: <a href="mailto:dariusz.kurz@put.poznan.pl">dariusz.kurz@put.poznan.pl</a> tel. 061 6652840 Wydział Elektryczny ul. Piotrowo 3A 60-965 Poznań		
<b>Prerequisites in terms of knowledge, skills and social competencies:</b>		
1	<b>Knowledge</b>	Basic knowledge of electrical engineering, electronics and information technology, including building systems.
2	<b>Skills</b>	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	<b>Social competencies</b>	Is aware of the need to broaden their competence, willingness to work together as a team.
<b>Assumptions and objectives of the course:</b> In-depth knowledge of the theoretical and practical problems associated with the construction of components, subassemblies and systems of modern buildings "smart".		
<b>Study outcomes and reference to the educational results for a field of study</b>		
<b>Knowledge:</b> 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+]		
<b>Skills:</b> 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++]		
<b>Social competencies:</b> 1. Able to think and act in an entrepreneurial manner in the area of systems analysis and systems in buildings - [K_K04++]		
<b>Assessment methods of study outcomes</b>		

<p>Lecture:</p> <ul style="list-style-type: none"> <li>- assess the knowledge and skills listed on the completion of the writing.</li> </ul> <p>Exercise Design:</p> <ul style="list-style-type: none"> <li>- test and favoring knowledge necessary for the accomplishment of the problems in the area of design tasks,</li> <li>- continuous evaluation for each course - rewarding gain skills they met the principles and methods,</li> <li>- assessment of knowledge and skills related to the implementation of the project tasks.</li> </ul> <p>Get extra points for the activity in the classroom, and in particular for:</p> <ul style="list-style-type: none"> <li>- propose to discuss additional aspects of the subject,</li> <li>- the effectiveness of the application of the knowledge gained during solving the given problem,</li> <li>- subsequent to the improvement of teaching materials,</li> <li>- developed aesthetic care tasks - in the self-study.</li> </ul>		
<b>Course description</b>		
<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>		
<b>Basic bibliography:</b>		
<ol style="list-style-type: none"> <li>1. Niezabitowska E.: Budynek inteligentny. Tom I: Potrzeby użytkownika a standard budynku inteligentnego, Wyd. Politechniki Śląskiej, Gliwice 2010.</li> <li>2. Mikulik J.: Budynek inteligentny. Tom II: Podstawowe systemy bezpieczeństwa w budynkach inteligentnych, Wyd. Politechniki Śląskiej, Gliwice 2005.</li> <li>3. Mikulik J.: Inteligentne budynki: Teoria i praktyka, Kraków: Oficyna Wydawnicza, 2010.</li> <li>4. Borkowski P.: Podstawy integracji systemów zarządzania w obrębie obiektu, WNT, 2009.</li> <li>5. Nawrocki M.: ?Europejska magistrala instalacyjna EIB?.</li> </ol>		
<b>Additional bibliography:</b>		
<ol style="list-style-type: none"> <li>1. <a href="http://www.knx.org">http://www.knx.org</a></li> <li>2. <a href="http://www.emiter.net">http://www.emiter.net</a></li> <li>3. <a href="http://www.smartech.com.pl">http://www.smartech.com.pl</a></li> <li>4. Prace dyplomowe IEiEP.</li> <li>5. Czasopismo ?Inteligentny budynek?</li> </ol>		
<b>Result of average student's workload</b>		
<b>Activity</b>	<b>Time (working hours)</b>	
1. Participation in lecture classes	9	
2. Participation in design classes	18	
3. Participation in consultation concerning the lecture	4	
4. Participation in consultation concerning the project	4	
5. Preparation for the test/exam	41	
6. Test/exam	4	
7. Preparing the design description	24	
<b>Student's workload</b>		
<b>Source of workload</b>	<b>hours</b>	<b>ECTS</b>
Total workload	104	4
Contact hours	39	1
Practical activities	46	2