STUDY MODULE DESCRIPTION FORM

Name of the module/subject		Code
Intelligent Building Automation		**1010334171010335187**

Field of study	Profile of study (general academic, practical)	Year /Semester
Control Engineering and Robotics	**general academic**	**4 / 7**
Elective path/specialty	Subject offered in:	Course (compulsory, elective)
-	**polish**	**obligatory**

Cycle of study:	Form of study (full-time,part-time)
First-cycle studies	**part-time**

No. of hours				No. of credits
Lecture: **18**	Classes: **-**	Laboratory: **-**	Project/seminars: **-**	**2**

Status of the course in the study program (Basic, major, other)	(university-wide, from another field)
major	**university-wide**

Education areas and fields of science and art	ECTS distribution (number and %)
technical sciences	**2 100%**

Responsible for subject / lecturer:

dr inż. Tomasz Pajchrowski
email: tomasz.pajchrowski@put.poznan.pl
tel. 61 6652385
Wydział Elektryczny
ul. Piotrowo 3A 60-965 Poznań

Prerequisites in terms of knowledge, skills and social competencies:

1	**Knowledge**	He has expertise in selected areas, including general physics thermodynamics, electricity and magnetism, optics, photonics and acoustics, and solid physics, including the knowledge necessary to understand the basic physical phenomena occurring in the components and systems automation and robotics and their environment Versed in the current state of development and the latest trends in the area of automation and robotics.
2	**Skills**	Can obtain information from literature, databases and other sources, has the ability of self-education in order to improve and upgrade professional skills He speaks English at B2 level sufficient to communicate, as well as reading comprehension datasheets, application notes, manuals, and equipment descriptions of tools Able to apply the principles of health and safety at work
3	**Social competencies**	Understands the need to know the capabilities and continuous training - raising professional competence, personal and social, can inspire and organize the learning process of others

Assumptions and objectives of the course:

-The aim of the course is to familiarize students with current automation systems in intelligent buildings and how they manage.

Study outcomes and reference to the educational results for a field of study

Knowledge:

1. K_W16+++ - [K_W16+++]
2. K_W18++ - [K_W18++]
3. K_W09++ - [K_W09++]

Skills:

1. K_U17+++ - [K_U17+++]
2. K_U09++ - [K_U09++]
3. K_U16+ - [K_U16+]

Social competencies:

1. K_K04++ - [K_K04++]

Assessment methods of study outcomes

-Lecture: written examination (theoretical knowledge test) in the field of programming content.

Laboratory: examining the practical skills of programming intelligent building automation systems, evaluation of tests and reports

Course description

-Lecture. Getting to know the structure, the basic principle of building automation interfaces: wired: RS232/422/485 and wireless ZigBee. KNX communication protocols, LCN, LonWorks. The integration of building systems (BMS). Intelligent building systems. The development of intelligent buildings

.

Laboratory. Getting familiar with the construction and programming of the basic building automation interfaces (RS-232, RS-232/422/485), start-up and programming of specialized protocols and LCN building automation KNX

Basic bibliography:

1. Niezabitowska E. (pod redakcją) ?Budynek Inteligentny ? potrzeby użytkownika a standard budynku Inteligentnego?, WPŚ, Gliwice, 2010

2. 2. Mikulik J. ?Europejska Magistrala Instalacyjna?, Merten, Warszawa 2008

Additional bibliography:

1. 1. Mielczarek W. ?Lokalne interfejsy szeregowe w systemach cyfrowych?, BTC, Legionowo 2008.

Result of average student's workload

Activity	Time (working hours)
1. Participation in lecture classes	18
2. Participation in laboratory activities	0
3. Participation in consultation	1
4. Preparation for laboratory	0
5. Develop reports	0
6. Preparing for the passing / examination	36
7. Participation in the passing / exam	2

Student’s workload

Source of workload	hours	ECTS
Total workload	57	2
Contact hours	21	1
Practical activities	0	0