

## COURSE DESCRIPTION CARD

Faculty of Mechanical Engineering									
Field of study	Automatic Control and Robotics Mechanics and Construction of Machinery Mechatronics						Degree level and programme type	Bachelor's degree Master's degree	
Specialization/ diploma path	-						Study profile	general	
Course name	Intelligent systems in buildings – Smart Home						Course code	IS-FME-00214S	
							Course type	obligatory/elective	
Forms and number of hours of tuition	L	C	LC	P	SW	FW	S	Semester	Summer
	30		15	15				No. of ECTS credits	6
Entry requirements									
Course objectives	<p>Introduction students to the latest trends related to device control in single-family and multi-family buildings as well as industrial plants.</p> <p>During the course, students learns the principles of communication, network structure and control principles of executive devices. Intelligent installation allows to control lighting, heating, ventilation and window covers, thus saving electricity. Intelligent installation can also - thanks to magnetic readers - open the door without using keys, as well as control devices located outside the house - garage door, wicket, external lighting, cameras, garden sprinklers or a fountain.</p>								
Course content	Learning to program the SmartHome system by Grenton, Fibaro which allows control lighting, heating, ventilation and window covers.								
Teaching methods	Multimedia design classes. Design system on computers								
Assessment method	Project: observation of work, discussion, activity, report								
Symbol of learning outcome	Learning outcomes							Reference to the learning outcomes for the field of study	
L01	have knowledge of the construction and operation of intelligent systems							SM_W04, SM_U03, SM_U14	
L02	can develop and present technical documentation for intelligent devices and systems							SM_U03	
L03	can design, configure, programming and testing intelligent systems assembled from standard components							SM_U14	
L04	able to work in a team							K_K04	
L05									
Symbol of	Methods of assessing the learning outcomes							Type of tuition during	

learning outcome		which the outcome is assessed	
LO1	project classes – observation of work, report	P	
LO2	Project classes – observation of work, report	P	
LO3	Project classes – observation of work, report	P	
LO4	Project classes – observation of work, report	P	
LO5			
<b>Student workload (in hours)</b>		<b>No. of hours</b>	
<b>Calculation</b>	participation in project classes	30	
	preparation for project classes	40	
	preparation a report for the project	60	
	participation in student-teacher sessions related to the project classes	40	
	<b>TOTAL:</b>	<b>170</b>	
<b>Quantitative indicators</b>		<b>HOURS</b>	<b>No. of ECTS credits</b>
Student workload – activities that require direct teacher participation		70	6
Student workload – practical activities		100	
<b>Basic references</b>	1. Danny Winget: Smart Smart Home Handbook, 2018 2. Adam Juniper: Smart Smart Home Handbook: Connect, control and secure your home the easy way, 2018 3. Richard Harper - Inside the Smart Home, 2013		
<b>Supplementary references</b>	1. Blair Watchmen: Smart Home: Smart Home Automation to Help You Live a Happy, Minimalist Life!, 2016 2. Gerard O'Driscoll: Smart Home Automation Essential Guides - The Complete Series, 2017		
<b>Organisational unit conducting the course</b>	Department of Automatic Control and Mechatronic Systems	Date of issuing the programme	
<b>Author of the programme</b>	Rafał Grądzki, Ph.D.	16.01.2023	

L – lecture, C – classes, LC – laboratory classes, P – project, SW – specialization workshop, FW - field work,  
S – seminar