GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Communication and Visualisation in Building Management Systems, PG_00047508		
Field of study	Automatic Control, Cybernetics and Robotics		
Date of commencement of studies	February 2024	Academic year of realisation of subject	2024/2025
Education level	second-cycle studies	Subject group	Optional subject group Subject group related to scientific research in the field of study
Mode of study	Full-time studies	Mode of delivery	at the university
Year of study	1	Language of instruction	English
Semester of study	2	ECTS credits	1.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Department of Automatic Control -> Faculty of Electronics, Telecommunications and Informatics		
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Piotr Fiertek	
	Teachers	dr inż. Piotr Fiertek	

Lesson types and methods of instruction

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	15.0	0.0	0.0	0.0	0.0	15

E-learning hours included: 0.0

Learning activity and number of study hours

Learning activity	Participation in didactic classes included in study plan	Participation in consultation hours	Self-study	SUM
Number of study hours	15	2.0	8.0	25

Subject objectives

Understanding basic methods of smart building management (BMS): commonly used communication protocols, as well as methods and popular software packages for management and visualization.

The following solutions will be discussed in more detail: LonWorks and BACnet.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K7_K02] is ready to provide critical evaluation of received content and to acknowledge the importance of knowledge in solving cognitive and practical problems	Implementation of the project based on the SCADA system: Trace Mode software.	[SK5] Assessment of ability to solve problems that arise in practice
[K7_W05] Knows and understands, to an increased extent, methods of process and function support, specific to the field of study.	Getting to know the basics of the construction and operation of communication systems in BMS systems. Especially from LonWorks and BACnet.	[SW1] Assessment of factual knowledge
[K7_W03] Knows and understands, to an increased extent, the construction and operating principles of components and systems related to the field of study, including theories, methods and complex relationships between them and selected specific issues - appropriate for the curriculum.	Getting to know the basics of the construction and operation of communication systems in BMS systems. Especially from LonWorks and BACnet.	[SW1] Assessment of factual knowledge

Subject contents

1. Basic issues of communication protocols
2. Communication media
3. Common communication protocols in control systems
4. Structure and application of the SCADA software

Prerequisites and co-requisites

<table>
<tr><td>Assessment methods and criteria</td><td colspan="3"><table><tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr><tr><td>Test</td><td>55.0%</td><td>100.0%</td></tr></table></td></tr>
<tr><td rowspan="3">Recommended reading</td><td>Basic literature</td><td colspan="2">Praca Zbiorowa "Building Automation: System Integration with Open Protocols" wydawnictwo APT, Orland Park USA, 2009</td></tr>
<tr><td>Supplementary literature</td><td colspan="2">no requirements</td></tr>
<tr><td>eResources addresses</td><td colspan="2">Adresy na platformie eNauczanie:</td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td colspan="3"></td></tr>
<tr><td>Work placement</td><td colspan="3">Not applicable</td></tr>
</table>