GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Application of Wireless Technologies, PG_00048669		
Field of study	Electronics and Telecommunications, Biomedical Engineering, Biomedical Engineering, Biomedical Engineering		
Date of commencement of studies	February 2023	Academic year of realisation of subject	2023/2024
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	2	Language of instruction	Polish
Semester of study	3	ECTS credits	2.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Department of Microwave and Antenna Engineering -> Faculty of Electronics, Telecommunications and Informatics		
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Łukasz Kulas	
	Teachers	dr hab. inż. Łukasz Kulas	

Lesson types and methods of instruction

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	0.0	0.0	15.0	0.0	15.0	30

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	30	2.0	18.0	50

Subject objectives

The aim of this course is introduction to development of wireless embedded systems relying on wireless technologies for communication of environment monitoring.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K7_W04] Knows and understands, to an advanced extent, the principles, methods and techniques of programming and the principles of computer software development or programming devices or controllers using microprocessors or programmable elements or systems specific to the field of study, and organisation of systems using computers or such devices	Knowledge of embedded software development in Embedded Linux environment.	[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.	Knowledge of embedded system development relying on wireless technologies for communication of environment monitoring.	[SW2] Assessment of knowledge contained in presentation

<table>
<tr><td>Subject contents</td><td>Introduction to Linux OS for embedded devices

Communication with peripherial devices via UART interphace

Dvelopment of network applications

HTTP server deployment

A single device or network of devices control via WWW

Development of own wireless embedded system</td></tr>
<tr><td>Prerequisites and co-requisites</td><td>Knowledge of C/C++ programming languages.</td></tr>
<tr><td>Assessment methods and criteria</td><td>
<table>
<tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr>
<tr><td>Project realized during seminar classes</td><td>50.0%</td><td>50.0%</td></tr>
<tr><td>Tasks during laboratory class</td><td>50.0%</td><td>50.0%</td></tr>
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</td></tr>
<tr><td rowspan="3">Recommended reading</td><td>Basic literature</td><td>Karim Yaghmour, Jon Masters, Gilad Ben-Yossef, Philippe Gerum "Building Embedded Linux Systems: Concepts, Techniques, Tricks, and Traps"</td></tr>
<tr><td>Supplementary literature</td><td>Christopher Hallinan "Embedded Linux Primer"</td></tr>
<tr><td>eResources addresses</td><td>Adresy na platformie eNauczanie:</td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td>Wireless system for lighting control

Indoor localization system

System for plants monitoring</td></tr>
<tr><td>Work placement</td><td>Not applicable</td></tr>
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