SYLLABUS

Name: ***Advanced IoT Hardware (InfAAu-IOT>SM2AIH19)***
Name in Polish:
Name in English: ***Advanced IoT Hardware***

Information on course:

Course offered by department: Faculty of Automatic Control, Electronics and Computer Science
Course for department: Silesian University of Technology

Default type of course examination report:

ZAL

Language:

English

Course homepage:

https://platforma2.polsl.pl/rau2/course/view.php?id=1039

Short description:

The objective of the course is to deliver to the students the latest and up-to-date knowledge on advanced hardware platforms of Internet of Things devices. That includes theoretical and practical approaches.

Description:

Method of conducting classes: Lecture/Laboratory
ECTS: 3
Total hours: 75h (45h contact hours / 30h student's own work hours)
Lecture: 15h
Laboratory: 30h

Student's own work:
Preparation for laboratory classes, preparation of a report from the exercises.

Lecture:
Modern hardware platforms for Internet of Things devices, e.g. Espressif, Texas Instruments, Raspberry PI, Nordic Semiconductor and others.

Teaching methods, including distance learning:
Traditional lecture supported by video materials available on the distance learning platform.

Lectures are not mandatory.

Laboratory:
Presentation of modern hardware platforms for Internet of Things devices, Espressif, Texas Instruments, Raspberry PI, Nordic Semiconductors, ST Microelectronics and others.

Laboratory provided at the university. It is possible to continue the exercise remotely in the laboratory at a distance.

Attendance at laboratory classes is mandatory.

Bibliography:

[1] A. Kapitonov, D. Dobriborsci, I. Pantiukhin, V. Chernov, R. Sell, R. Puks, M. Kingsepp, A. Nikitenko, K. Berkolds, A. Vagale, R. Rumba, Piotr Czekalski, Krzysztof Tokarz, Oleg Antemijczuk, Jarosław Paduch, R. Sell, S. Distefano, R. Dautov, R. Di Pietro, A. Longo Minnolo. „Introduction to the IoT", 2019, http://iot-open.eu/download/io1-introduction-to-the-iot/
[2] "ITU Internet Reports 2005: The Internet of Things." http://www.itu.int/osg/spu/publications/internetofthings/
[3] "Special Report: The Internet of Things", in "the institute", IEEE 2014, http://theinstitute.ieee.org/static/special-report-the-internet-of-things
[4] "Towards a definition of the Internet of Things (IoT)", IEEE 2015
[5] Standard for an Architectural Framework for the Internet of Things (IoT) http://grouper.ieee.org/groups/2413/
[6] Ovidiu Vermesan, Peter Friess (eds.): Digitizing the Industry, Internet of Things Connecting the Physical, Digital and Virtual Worlds, River Publishers Series in Communications, 2016

Learning outcomes:

the student knows issues related to the Internet of Things closely related to the field of study and the IoT specialization - K2A_W02

the student knows theoretically based detailed issues in the field of the Internet of Things - K2A_W06

the student knows development trends and the most important new achievements in the field of the Internet of Things - K2A_W09

basic methods, techniques and tools used in programming and using Internet of Things devices - K2A_W11

Assessment methods and assessment criteria:

Form and criteria for passing:

The semester is passed based on the laboratory. The final grade is the average of the grades from all laboratory exercise reports.

Conditions for obtaining a pass:

a) Participation in all laboratory exercises or active participation in remote laboratories.

b) Preparation and electronic submission of reports from all laboratory exercises.

c) Obtaining a positive grade from all laboratory exercises.

The grade from each laboratory exercise has the same weight.

In the event of an excused absence from the laboratory, the exercise must be made up.

The syllabus is valid from the academic year 2025/2026, and its content is not subject to change during the semester.

Course credits in various terms:

Informatics, full-time master degree studies 3 sem. (InfAAu-SM3)			
Type of credits	Number	First term	Last term
European Credit Transfer System (ECTS)	3	2020/2021-Z	