SYLLABUS

Name: ***Distributed Systems and Cloud Computing (InfAAu-IOT>SM3DSCC19)***
Name in Polish:
Name in English: ***Distributed Systems and Cloud Computing***

Information on course:

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

Default type of course examination report:

ZAL

Language:

English

Course homepage:

https://platforma2.polsl.pl/rau2/course/view.php?id=946

Short description:

The aim of the whole course is to familiarize students with the concepts related to the processing and analysis of Big data, Big data processing platforms (including Hadoop, Hive, Pig) and their architecture, methods of data storage and transformation, computational models used on large data processing platforms and programming solutions for data analytics on these platforms. Students will learn about concepts related to cloud computing, its architecture, models, platforms, interoperability, and programming solutions operating in the cloud for various applications. Problems solved with the help of cloud computing will be presented. Students will be familiarized with service models and implementation models of cloud computing as well as selected services of a selected public cloud platform.

Description:

ECTS: 2
Total workload: 50 hours (25 contact hours, 25 students' own work hours)
Forms of contact hours:
Project 15h
Other (report discussion): 10h
Students' own work: project implementation, reading literature or multimedia materials, developing a solution or performing practical exercises, preparing a report, presenting project results

In the third semester, students independently carry out a project related to the processing and analysis of large data, large data processing platforms, IoT systems, or cloud computing.

Project:
The selected self-paced problem includes practical training in areas demonstrated during the lecture, including the benefits and costs of using cloud computing, computing scaling and load balancing, cloud system security, virtual networks, cloud data storage, computational models, and potentially big data analytics and the Internet of Things.

Bibliography:

J. Aven (2017) Hadoop in 24 Hours, Sams Teach Yourself. Sams Publishing; 1 edition (April 17, 2017)
B. Bengfort, J. Kimm (2016) Data Analytics with Hadoop: An Introduction for Data Scientists 1st Edition, O'Reilly Media; 1 edition (June 18, 2016)

Learning outcomes:

Knowledge: the student knows and understands
Student knows available cloud resources that can be used together to satisfy different business goals and technological requirements (project report) - K2A_W06

Student knows how to configure secure and scalable systems working on the cloud (project report) - K2A_W11

Student knows different compute and storage resources for various processing and analytical tasks (project report) - K2A_W14

Skills: student can
Student is able to select services required to build advanced, scalable IT systems for Big Data analysis, IoT, working in the cloud (project report) - K2A_U12

Social competencies: the student is prepared to
work on a dedicated problem and cooperate in the group while solving a more complex problem, gain additional knowledge from technical documentation and deepen the knowledge to upgrade his skills (project report) - K2A_K06

Assessment methods and assessment criteria:

Project
Documented project work
Passing criteria: providing and presenting the project work in accordance with the specified requirements of the project task and delivery of program codes and a report.

The syllabus is valid from academic year 2025/26 and its content cannot be changed 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)	2	2020/2021-Z	