Digital Platforms in Engineering Research

Status: Elective
Department: Agroengineering
Lecturer: Bohdan Oleksandrovych Sarzhanov, PhD, Senior Lecturer
Contact Information: Room 216m
Consultation Hours: Every Thursday from 12:00 to 14:00
E-mail: arhimag0@gmail.com
Web page: Profile

Course Objective

The course aims to provide an understanding of the principles of digital ecosystems, cloud computing, big data (Big Data), artificial intelligence (AI), and the Internet of Things (IoT) in industrial engineering. Modern methods for automating data collection, processing, and visualization used in scientific and applied research are studied.

Main Tasks

The course focuses on developing skills in using modern digital tools such as cloud services, big data (Big Data), artificial intelligence (AI), the Internet of Things (IoT), and digital twins for managing and optimizing engineering processes.

Upon Completion of the Course, the Student Should:

Know:

- Theoretical foundations and architecture of digital platforms.
- Methods of collecting, processing, and analyzing big data (Big Data).
- Modern approaches to research automation and engineering analysis.
- Methods of digital modeling and simulation.

Be Able To:

- Use modern digital platforms for data collection, processing, analysis, and visualization in engineering research, applying cloud technologies and Big Data to optimize technical solutions.
- Integrate digital platforms with hardware-software complexes, sensors, monitoring systems, and automated control systems, as well as configure them for experimental research in industrial engineering.
- Apply digital technologies for managing engineering processes, assessing their efficiency, and implementing innovative solutions in the field of industrial engineering.