

## Industrial Internet of Things and Services

Course Workload		Assessment form (examination/ graded test/ ungraded test)
ECTS	Hours	
3	108	Exam

The discipline is aimed at obtaining students knowledge and skills in the field of creation, operation and modernization of industrial Internet of things systems

### Course structure:

#### 1. Fundamentals of the Industrial Internet of Things

- 1.1. Internet of things in industry.
- 1.2. Internet of things in industry. Prerequisites for the emergence and stages of the implementation of Internet of Things technologies in industrial production.
- 1.3. Modernization of industrial production based on industrial Internet of things technologies

#### 2. Industrial Internet of Things infrastructure

- 2.1. Development of machine-to-machine interaction technologies
- 2.2. End devices - controllers, sensors, actuators. The role of end devices in the architecture of the industrial Internet of things. Embedded systems.
- 2.3. Smart sensors and smart equipment
- 2.4. Protocols and hardware platforms for the Industrial Internet of Things. Data management technologies.

#### 3. Architecture of the Industrial Internet of Things

- 3.1. Building networks for the industrial Internet of things; protocols for the exchange and transmission of industrial data; LPWAN technologies; wireless sensor networks (WSN) and RFID technologies
- 3.2. Technologies for identification, traceability and control of industrial facilities
- 3.3. Information support of the industrial Internet of things.

#### 4. Industrial internet of services

- 4.1. Internet of services: service-oriented organization of internal and external production processes
- 4.2. Service Oriented Architecture (SOA) for the Industrial Internet of Things; creation of a service-oriented ecosystem in production.