ITMO University

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.