

Industrial Internet of Things (IIoT)

Session 1: Introduction to the IoT (Internet of Things)	
✓ Defining IOT, Characteristics of IOT	✓ Physical Design of IOT
✓ Communications Models of IOT	✓ Various Application of IOT
Session 2: Introduction to API	
✓ Introduction to API, Sensing, Actuation	✓ Various type of Industrial Sensors
✓ Various type of Industrial Actuation	✓ Examples of API
Session 3: Introduction to IIOT	
✓ Industry 4.0: Globalization and Emerging Issues	✓ The Fourth Revolution, LEAN Production Systems
✓ Smart and Connected Business Perspective	✓ Smart Factories
Session 4: Industry 4.0	
✓ Industry 4.0: Cyber Physical Systems	✓ Next Generation Sensors
✓ Collaborative Platform and Product Lifecycle Management	✓ Cyber Security in Industry 4.0, Basics of Industrial IOT, Industrial Processes, Industrial Sensing
✓ Industrial Internet Systems	
Session 5: Business Model	
✓ IIOT-Introduction, Industrial IOT: Business Model	✓ Reference Architecture, Industrial IOT Layers
✓ IIOT Communications	
Session 6: Computer Techniques use in IIOT	
✓ Industrial IOT: Big Data Analytics	✓ Software Defined Networks, IIOT Analytics
✓ Introduction to Machine Learning and Data Science	✓ R and Julia Programming, Data Management with Hadoop
Session 7: Networking Basics for IOT	
✓ Networking model for IOT	✓ Wireless medium access, MAC Protocol
✓ Sensor Deployment	✓ Examples of Networking models
Session 8: Communication Protocols & Sensors Networks	
✓ Communication Protocols for IOT	✓ Various type of communication tool for IOT
✓ Sensor Networks, Machine to Machine Communications	✓ Difference between M2M and IOT
Session 9: Interoperability in IOT, Sensors and Actuators	
✓ Various types of Interprobabilites of IOT	✓ Various type of sensors used with Arduino
✓ Study of sensors and their data sheets	✓ Various type of Actuators used with Arduino
✓ Study of Actuators and their data sheets	
Session 10: Python Programming	
✓ Introduction to Python Programming	✓ Design and Security Challenges
Session 11: Introduction to Raspberry Pi Part-1	
✓ Implementation of IoT with Raspberry	✓ Why is development board, how to install a development board
Session 12: Introduction to Raspberry Pi Part-2	
✓ Programming for Raspberry Pi	✓ Scratch, Python, JS Node, Thano
Session 13: Introduction to Raspberry Pi Part-3	

✓ Hardware Interfacing of Raspberry Pi	✓ Programming for interfacing of various sensors and actuators with raspberry pi
Session 14: Introduction to Raspberry Pi Part-4 & Part-5	
✓ Remote Access of PI	✓ Various techniques for controlling raspberry pi from remote location
✓ Raspberry Pi for IOT	✓ Application of raspberry as IOT
Session 15: SDN	
✓ Sensor Digital Network	✓ Introduction to SDN, SDN for IOT, Data Handling and Analytics
Session 16: Application Areas of IIOT	
✓ Industrial IOT-Application Domains, Healthcare, Power Plants, Inventory Management & Quality Control Plant Safety and Security	✓ Including AR and VR Safety Applications, Facility Management etc.