



Course: [Internet of Things](#)

Program: [Hands on Internet of Things](#)

Duration: [2 days | Certified Training](#)

Overview

The Internet of Things (IoT) touches all our lives and will continue to do so in a way that where everything in your life is connected – house, car, home appliances, smart homes, your pacemaker, we are on an era where we cannot run away from internet and the way how it is impacted our daily life. IoT which is part of Industry 4.0 revolution has already changed things. It's all about data and how data influences us.

The Internet of Things Training Course, IoT Training covers What the IoT is about, technology trends, deployments and convergence. Learn how to work with building connected devices, sensors, automation, network interconnection, system security, cybersecurity, data analytics and more.

IoT Training Course attendees will learn about the dynamics of the IoT markets, technology, trends, planning, design and the convergence of platforms and services with a special focus on the product design, architecture and implementation.

This is a fundamental IoT course covering the technologies behind the Internet of Things and connected devices.

Course Content

What is the Internet of Things (IoT)?

- Concepts and definitions of The Internet of Things (IoT)
- History of IoT
- Applications
- IoT standards
- Requirements

- Functionalists and structure
- IoT enabling technologies
- IoT architecture
- Major components of IoT
- Hardware, sensors, systems-on-a-chip, firmware, device drivers, application software, connectivity, cloud and security
- Role of wired and wireless communication
- IoT communication and networking protocols
- IoT services and applications
- Big data and analytics
- Security
- Cloud computing and the Internet of Things
- Semantic Web 3.0 Standard for M2M and IoT
- IoT Platforms
- Challenges of adapting the concepts

Overview of IoT Connectivity Methods and Technologies

- Wireless 101
- RF 101
- ZigBee PRO, ZigBee 3.0 and ZigBee IP
- 6LowPAN
- RFID
- Bluetooth and BLE (BT5.0)
- Z-Wave
- Home Automation (HA) Profile
- Smart Energy (SE) Profile
- Health Care
- IEEE 802.15.4, IEEE 802.15.4e, 802.11ah

- 802.11ah, Wi-Fi HaLow
- Relay Access Point (AP)
- Grouping of stations
- Target Wake Time (TWT)
- Speed Frame Exchange
- Sectorization
- GSM, CDMA, GPRS, 3G, LTE, small cells, SATCOM
- LTE and 5G
- Sensors and sensor networks
- Serial communication
- Power consumption and optimization
- MIPI, M-PHY, UniPro, SPMI, BIF, SuperSpeed USB Inter-Chip (SSIC), Mobile PCIe (M-PCIe) and SPI
- Wired connectivity
- IPv4/IPv6
- Ethernet/GigE
- Real-time systems and embedded software
- Big data
- Analytics
- Cloud computing and storage
- Augmented Reality

Evaluation of IoT

- Platforms
- Mobile integration
- Deployment
- Data visualization
- Convergence with social networks
- Value chain and business models
- User centric cloud-based services

- Analytical hierarchy process for technology selection
- End-to-end security
- Integration with IT systems
- Cost/benefit constraints
- End-to-end compatibility
- Application architecture
- Lifecycle solution management
- Real-time response and delay
- IoT and blockchain
- IoT modelling and simulation
- Programming the Internet of Things (IOT)
- IoT wireless & cloud computing
- Industrial IoT on cloud platforms
- Architecting smart IoT devices
- Internet of Things and embedded systems
- IoT and embedded hardware
- IoT python programming for the raspberry pi platform
- Emerging IoT and big data technologies