



In collaboration with



## Certified IoT Specialist (CIoTS)

**RM3,500 (SBL AND SBL KHAS CLAIMABLE)**

**Duration : 3 days**

### Course description

Internet of Things (IoT) as a buzzword has caught the attention of all of us. This course will help you gain adequate knowledge on the Internet of Things. You will be able to understand the potential of the Internet of Things for our society, in terms of impact on the lives of billions of people and on the world economy. You will also understand the underlying technology that powers the Internet of Things, as well as the challenges that comes with such technologies. We will explore many real-life examples of IoT devices that are commercially available, and you will have a glimpse of the future of the Internet of Things.

### Course objective

- Introduction and description of core concepts of IoT, role and scope of smart sensors for insuring convergence of technologies and multidisciplinary engineering practices, wireless sensor networks, machine learning/data analytic and cloud computing
- Understand on IoT Open innovation platform and hardware platforms and operating systems commonly used in IoT systems.
- Big data predictive analytics and transformation from IT to IOT.
- Awareness of IoT security and opportunities.

### Learning outcome

At the end of this course, the students will be able to

- Explain what is the Internet of Things
- Understand how Internet of Things devices interact together & with users
- Learn about the protocols used by Internet of Things devices
- Discover the different platforms that are available to develop applications
- Learn about commercially available devices that are already using the Internet of Things
- Understand the current challenges of the Internet of Things
- Visual Analytics, predictive analytics with IoT

## Course Outline

### Day 1: IoT Fundamental and Ecosystem

- Introduction to IoT
  - What is IoT - In-depth explanation
  - IoT Applications in different domain
  - How large is the IoT Market in different domains?
- IoT Architecture
  - Architecture.
  - Tech Stack.
  - Protocols.
- Sensors
  - What is Sensor & Actuator?
  - What is good sensor?
  - Sensor properties.
  - Types of sensors
  - Sensor Demo - Proximity and IR sensors
- IoT World
  - Latest updates in the IoT industry.
  - Available IoT alliances details and the standards that are getting evolved
  - Multiple IoT applications and solutions available in market
  - Multiple IoT platform ( hardware) example ARM Mbed, Intel, Free scale etc., comparison and usage
  - Multiple IoT software and cloud platform, Components of a Platform, Usage, comparison. IoT eco systems build around these platforms. OSMOSIS platform and our experience about IoT platform building
  - Details about your OSMOSIS IoT platform
- Communication
  - Latest updates in the IoT industry.
  - Available IoT alliances details and the standards that are getting evolved
  - Multiple IoT applications and solutions available in market
  - Multiple IoT platform ( hardware) example ARM Mbed, Intel, Free scale etc., comparison and usage
  - Multiple IoT software and cloud platform, Components of a Platform, Usage, comparison. IoT eco systems build around these platforms.
  - Mi-MIST IoT Platform- platform and our experience about IoT platform building
  - Details about your Mi-MIST IoT Platform
- End2End Cold Chain IoT Middleware Demo – Mi-MIST IoT Platform

## Day 2

### Part II: IoT Cloud and Analytics

- Cloud Computing
  - What is cloud?
  - What is cloud computing?
  - Benefits of cloud.
  - History of cloud computing.
  - Deployment Models.
  - Top cloud providers.
  - Service Models
  - Service Catalogue
  - Different Services from Amazon
  - Advantages for different offerings
  - Our learning in selecting the right service provider
- Cloud Computing & Data Analysis
  - **Web services**
    - What are Web Services?
    - Why Web Services.
    - Types of Web Services.
    - RESTful web services.
    - Design Principles.
  - **Introduction to the Big Data and Big data technologies and stream processing.**
    - Cloud data storage
    - Introduction to BigData
    - BigData Definition and Characteristics
    - Who is Generating BigData
    - BigData Analytics
    - Why BigData Analytics
    - Applications of BigData Analytics

- Different Data Stores
- BigData Technologies - CouchDB, MongoDB, Node4J
- **Visual Analytics, predictive analytics.**
  - Analytics.
  - What is Visual Analytics?
  - Visual Analytic Tools for Big Data.
  - Predictive Analytics.
  - Predictive tools for Big Data.

## Day 3

### Part III: IoT Security and Opportunities

- Design considerations and IoT Security
  - How IoT Platform provide security assurance?
  - Experience from Mi-MIST IoT platform security features
  - How secure is IoT?
  - Vulnerabilities
  - Key aspects for Securing IoT solutions
- Build IoT Solutions For Home Automation and Logistics as part of this training.
  - Solve Real Live usecases of Home Automation & Logistics
  - Build solution for both Hardware and Software
  - Use cases: Fleet management solution, Surveillance solution
- IoT Opportunities
  - Brainstorming on opportunities and how they can be realize