

Internet of Things – Advanced Certification



The Course

Internet of Things (IoT) is a network infrastructure that connects physical objects and software applications wirelessly, allowing them to communicate with each other and exchange data via network communications, cloud computing, and data capture.

In this instructor-led, live training, participants will learn the fundamentals of IoT as they step through the creation of an Arduino-based IoT sensor system.

The Eligibility

Passionate Technology Enthusiasts with a minimal knowledge on IT and Operating Systems.

IOT Foundations Course

The Rulepaper Promise

By the end of this training, IT professionals, Industry professionals, entrepreneurs, students, Engineers, managers and anyone else who wants to make a career in IoT get a much needed head start.

This provides a deep understanding about business verticals, regulations, IoT platforms, Alliances, Consortiums and business opportunities is given in this training.

This training gives entrepreneurs an opportunity to get started with building their own IoT Solutions

The Instructor

Enterprise Architect with huge experience on IOT as well as Private and Public Cloud Technologies. The trainers are advisors and members of larger IOT Forums and seasoned integrators of IT with IoT technologies with more than 12+ years in global large enterprise giants.



Course Contents

Module 1

IOT Architecture

Architecture.

Tech Stack.

Hardware Development Platforms

Software Development Platforms

Communication Protocols

Power Requirements in IoT

Cloud, its components and IoT

Data Streaming and IoT

Data Store and IoT

Analytics and IoT

IoT Security

Module 2

Communication and Protocols

Introduction to communication architecture Network protocol stack

Different protocols : RF: ZigBee, Blue Tooth, BLE, Zwave, Google thread, Mesh network.

Communication Channels: GSM/GPRS, 2G, 3G, LTE, WiFi, PLC

Module 3

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 & other vendor

Advantages for different offerings

Module 5

IOT and Analytics

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



Course Contents

Module 5

IOT Security

Secure your IoT
Vulnerabilities
Key aspects of securing IOT Solutions
Fog Computing
Roof Computing
Comparison between Cloud Computing, Fog Computing and Roof Computing

Module 6

Sensor Integration

Connect Arduino with -
Temperature Sensors
LDR
PIR

Program them and read sensor data

Module 7

Gateway Communication

Integrating GPS to Arduino
Read Sensor Data
Establish HTTP Connection using GPRS
JSON Communication via API over HTTP

Module 8

Cloud Platform and Databases

Various Cloud platforms for IOT
Overview on Carriots/Spark/Thingsworks
Controlling your remote device via GSM
Google Firebase



Course Contents

Module 9

Project 1 - Arduino + Realtime GPS monitoring using Cloud Databases

Connecting an Arduino to GPS and monitoring realtime metrics of any device present in any location using Cloud databases realtimg from any part of globe.

Module 10

Project 2 - Smart Lights and smart devices

Controlling two devices over an app over wifi . Buidling the design, integrating it with the app and communicating as well as controlling the devices via app from mobile or web application.

Module 11

Project 3 - Motion Detection and notifying by email - A Surveillance IOT project

Design and deploy. Integrate the device with appropriate sensors as Motion Detection Sensors and raise an alarm or an email for unusual activity

Module 12

IOT with Raspberry PI (Optional)

Raspberry Pi Refresher

Using GPIO Pins

Communication Protocols

Setting Up the Raspberry Pi for IoT

Connecting the Raspberry Pi to LAN via Ethernet

Using SSH

Installing a Server

Creating an IoT Motion Sensor System with Raspberry Pi

Overview of PIR Motion Sensor

Creating a Database for Sensor Data Logging

Recording the Sensor Data in the Database

Triggering and Sending Push Notifications via messaging servers



Lab Requirements

IOT KIT CONTENTS **RULEPAPER IOT KIT**

An IOT KIT alongwith the below components will be supplied post enrollment of the training session

Mandatory KIT



The Duration

Duration of the Course is 30 hours.

The Lab Requirements

Students must bring their own laptops with basic configuration
IOT KIT will be supplied on enrollment of the course

The cost of the Training

Please send an email or contact us at enquiry@rulepaper.com to know more about the cost and next batch schedules.

The certifications

Once the training is completed the student will be provided a training certificate from Rulepaper.

