

Appleton Innovations

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Ministry of MSME, Govt. of India



Internet of Things (IoT) Training

Master the most advanced electronic, automation and IoT cloud technology and build projects using IoT Kit. Learn ESP8266, Arduino, Thingspeak, Blynk and IBM. Using Internet of Things Development kit, you will develop projects like IoT based Weather Station using IBM Cloud, Home Automation using IOT, Notification Cube, IOT based smart irrigation controller and more than 10 projects.

Syllabus

Module-1: Introduction to Internet of Things

- Introducing to IOT
- IOT Applications
- IOT Network Architecture
- IOT Device Architecture
- IOT Communication Protocols
- IOT Product Development Overview

Module-2: Getting Started with Arduino

- A tour of Arduino Board and Hardware: Power Supply, Power Pins,
- Analog and Digital Pins
- Types of Arduino Boards
- Introduction to Arduino programming
- Variables
- IF-Else conditional statements
- Loops: For, While
- Functions
- Digital Inputs and Digital Outputs
- The serial monitor
- Arrays and strings
- Using Libraries in Arduino
- Arduino data types
- Arduino Commands

Module-3: Sensors, Actuators & Electronics

- Introduction to sensors and types
- Analog Sensors: Temperature, Light Sensor, Potentiometer,
- Digital Sensors: Soil Moisture sensor, Motion Sensor, DHT11 sensor, Button
- Digital Signals
- Basic electronics: resistors, capacitors, diodes, transistors and etc.,
- Introduction to Actuators
- Interfacing Piezo Buzzer
- Interfacing LED's
- Interfacing RGB LED's
- Interfacing Relay

Module-4: Wireless Communication Technologies

- Introduction to wireless technologies: WiFi, Bluetooth, Ethernet, LoRaWAN, WiMAX and ZigBee
- Interfacing ESP8266 WiFi Shield
- Interfacing Bluetooth Module
- WiFi Station and Client

Module-5 : IoT using Blynk Mobile Platform

1. Setting up Blynk
2. Install Blynk Library
3. Exploring various control widgets
4. Exploring various display widgets
5. Notification widgets and virtual pins

Module-6 : Smart Applets using IFTTT

- Introduction
- Automate day to day activities through IFTTT
- Posting updates on Facebook
- Automation with IFTTT
- Sending text message notifications
- Google Voice to control Home Appliances

Module-7: Cloud Data Monitoring using Arduino

- Concept & Architecture of Cloud
- Role of Cloud Computing in IoT
- Tools, API and Platform for integration of IoT devices with Cloud
- Internet of Things platforms for Arduino
- Posting the sensor data online
- Retrieving your online data
- Monitoring sensor data from a cloud dashboard
- IoT cloud platform and integration with Gateway
- Working with Thingspeak platform

Module-8: IoT using IBM Cloud

- Getting Started with IBM Watson IOT Platform
- Send Sensor data to Watson IOT Platform using MQTT
- Visualizing real-time data by using boards and cards
- Getting started with Watson IoT Platform using Node-RED
- Watson IOT Node & IBM IOT App Node
- Create Node-RED application to receive events from the device

IoT Development Kit

- NodeMCU (ESP8266)
- Breadboard
- Relay Module
- DHT11 Sensor
- USB Cable
- Jumper Wires
- Light Sensor
- RGB LED
- Push Button
- Buzzer
- LED's
- Resistors

Course Projects, Industry Projects



Smart Home



Smart Light Bulb



Panic Alarm Health product



Smart Agriculture



IoT based Notifications



Smart Applets



Smart Presence Detection System



Notification cube

Tools



Training Highlights

- **Course Completion Certificate**
- **50+ Hours Live Training**
- **Internships support**
- **Internship Certificate on successful project completion**
- **Accredited by IABAC**

Training Duration:

50+ hours

Two months (Training + Internship)

Training Fee:

RS 5300/- per student

For more details:

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