Basic Hands on IOT Training (24 Hours)

SESSION-1: Basic IOT Architecture (2 Hours)

- **End-To-End IOT Architecture with detailed explanation**
- **IOT Application or Use-Case with IOT Analytics**
- **IOT Market Landscape/Business or JOB opportunities in detail**
- **Availability of Readymade IOT Hardware + Software + Platform solutions**

SESSION-2: Hardware Design & Interfacing (4 Hours)

- **Embedded Hardware Overview**
- **Arduino Programming Fundamentals: Arduino IDE**
- **Hands on Session: Read Real world data from Analog/Digital sensors &Actuators/Output interfacing with microcontroller.**

SESSION-3: Communication & Network Theory (4 Hours)

- **Depth explanation of each and every layer of TCP/IP stack with practical examples**
- **IPv4 addressing problem for IOT and introduction to IPv6. OR Why IPv6 is required to address more devices?**
- **Networking Theory**
  1. OSI Layer model
  2. Protocol stack Model
  3. IOT Protocols
  4. Importance of Brokers

SESSION-4: Environmental Applications on thing-speak IOT cloud platform (5 Hours)

- **Connectivity Protocol- GPIO(Wired)**
- **Communication Channel- Ethernet**
- **Messaging Protocol- REST/Web Socket**
- **IOT Cloud Platform- Thing Speak IOT Platform**

SESSION-5: Energy & Industrial Applications on Blynk IOT cloud platform (4 Hours)

- **Communication Channel- Ethernet/Wi-Fi**
- **Messaging Protocol- SMTP/REST/Web Socket**
- **IOT Cloud Platform- BLYNK IOT Platform**

SESSION-6: Node MCU ESP8266 (5 Hours)

- **Driver installation on Node MCU**
- **Flashing Node MCU**
- **Configuring Wi-Fi Interfacing & connect to the internet**
- **Connecting Node MCU using IOT Blynk Platform**
- **Web Server implementation on Node MCU**