

Internship On Basic & Advanced Industrial IOT

COURSE CONTENT

Introduction to IoT

1. Introduction to IoT
2. IoT Structure
3. What is Internet of IoT

Architecture & Scope

1. Why IoT is important
2. Applications of IoT
3. How is IoT changing the World

IoT Applications

1. IoT, Characteristics & Technologies
2. Electronics Components

Programming

1. Programmable Boards
2. Programming Languages (C & Embedded C)

Concept of Sensors Interfacing with Controller

1. Sensors & Actuators
2. Analog Sensor & Digital Sensor
3. Controller & Processor

Arduino environment

1. Atmega328 & IDE install
2. Arduino IDE, Coding's
3. Basic Components interfacing With ARDUINO UNO

Hardware Interfacing & ESP12/ESP32

1. Installation Of ESPxx Boards
2. Sensors Interfacing ESP12
3. Display interface with ESPxx

IoT Hands on Experiments

1. Automation Electronics Devices
2. Web server Data Reading

Raspberry Pi

1. What is Raspberry Pi ?
2. Application Of Rpi
3. Hardware Description & Pin Configuration

OS Installation

1. SD Card Formatter Image Installer
2. Installing OS
3. OS Booting Into Desktop

Network Setup

1. Setting Up Using Command Line
2. Finding Pi's IP Address
3. Connecting with Wi-Fi

Desktop Remotely operation

1. Enabling VNC
2. Logging in Using VNC Viewer

Basic Python Scripting

1. Python Programs
2. Python Code with Hardware Testing

Interfacing Sensors and other Electronic Components

1. Interface Sensors & Reading Values

RPi as a Web server

1. Apache Installation
2. Configuring and Deploying Apache
3. Basic Web Development



Coding IDE's Installing

1. Using Terminal

Projects

1. Home Automation web server switch
2. DHT11 Data Read in Web server
3. Data store in Think speak Server
4. Live Streaming
5. Smart Mirror
6. Home Automation Using Alexa
7. Electronics device Automation Using Google Assistant
8. Bluetooth Controlled Robot
9. Web Control Robot
10. Weather monitoring system
11. Irrigation System

