
IOT (Using Arduino) Course Content

- What “the Internet of Things” means and how it relates to Cloud computing concepts.
- How open platforms allow you to store your sensor data in the Cloud.
- The basic usage of the Arduino environment for creating your own embedded projects at low cost.
- How to connect your Arduino with your Android phone.
- How to send data to the Internet and talk to the Cloud.
- How to update sensor readings on Twitter (Social Networking Sites).
- Control a Relay Switch by texting from your Phone.

Day 1

Session 1

Introduction to the Internet of Things

1. The Internet of Things
2. Introduction to Cloud Computing
3. Introduction to ethical hacking
4. What is web hacking
5. What is system hacking

The Arduino Platform

1. The Arduino Open-Microcontroller Platform
2. Arduino Basics
3. Arduino Board Layout & Architecture

Arduino Programming & Interface of Sensors

4. Interfacing sensors with Arduino

5. Programming Arduino
6. Reading from Sensors

Project 1: Simple LED Program for Arduino

Project 2: Integrating Sensors & Reading Environmental Physical Values.

Session 2

1. Talking to your Android Phone with Arduino
2. Connecting Arduino with Mobile Device.
3. The Android Mobile OS.
4. Using the Bluetooth Module

Project 3: Home Automation using Android Smartphone

Project 4: Reading Environmental Values on Android Smartphone.

Day 2

Session 1

Project 5: Tweet Sensor Reading through your phone on Twitter.

1. Creating App on Twitter
2. Integrating Arduino to talk with Twitter via Internet.
3. Cloud Computing
4. Communicating with the Cloud using Web Services.
5. Cloud Computing & IoT.

6. Popular Cloud Computing Services for Sensor Management.

Session 2

Introduction to Interrupts

1. What is interrupts
2. Application of Interrupts
3. Registers of Interrupts Different Modes
4. Explaining ARDUINO Serial communication

Project 6: Sending Arduino Data to your Cloud Application.

Project 7: Use Arduino to upload free data from Environmental Sensors.

Competition

After the hand on theory and practical experience from the workshop, a competition will be conducted for the participants.

Certificate Distribution

On behalf of Techtron Technologies Certificate of Merit will be provided to all Zonal Round Winners and Certificate of Participation will be provided to all the Zonal Round Participants (Excluding Merit Participants).