



Dear Sir,

Greetings from Forge Academia & IT Services Pvt Ltd !!!

As discussed earlier, we are ready to host IoT workshop at Chirala Engineering College on 29th & 30th December, 2016. The workshop would be addressed by experts from the fields of academic as well as industry.

"Chirala Engineering College will be the **zonal center of Technex'16 IIT Varanasi**. On the 2nd day of Workshop two best performing teams will get a direct entry to Final Round competition to be held at **Technex'17 IIT Varanasi** in Feb, 2017".

Workshop Requirements

- College seminar room/auditorium.
- A good Quality LCD Projector.
- Public Addressing System (2 Cordless MICs.)
- Power backup and 220V AC power Points.
- Hospitality for two days to our visiting delegation during workshop days.
- Pick & Drop Facility from nearest railway station/bus station/airport.

Stages of Event

- **Round 1:** Workshop will be organised at 20 different Zonal Centres/Colleges in India from July, 2016 to March, 2017.
- **Round 2:** A Zonal Round Competition will be organised at the Zonal Centre on 2nd day of Workshop & two best performing teams will get a direct entry to Final Round competition to be held at **Technex'17 IIT Varanasi** in Feb, 2017.



- **Round 3** : A Final Round competition will held at **Technex'17 IIT Varanasi** among all the Zonal Centre winning teams in Feb, 2017 and winning team will get Certificate of Excellence & Prizes.

Objective of Workshop

The main objective of the workshop is to make the aspiring engineers acquainted with the conceptual as well as practical knowledge of **IoT- Internet of Things**. It is one of the **Latest Technology** which is going to change our lifestyle and the technology we use in coming years. It is estimated that by 2020 approx 50 Billion electronics devices on this planet will be connected to internet.

Workshop Highlights

- 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
- 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).
- How to control any device from anywhere across the world.

Topics to be Covered in Workshop

Day 1

Introduction to the Internet of Things

- ✓ The Internet of Things
- ✓ The Basics of Sensors & Actuators
- ✓ Introduction to Cloud Computing



The Arduino Platform

- ✓ The Arduino Open-Microcontroller Platform
- ✓ Arduino Basics
- ✓ Arduino Board Layout & Architecture
- ✓ Reading from Sensors

Programming fundamentals (C language)

Arduino Programming & Interface of Sensors

- ✓ Interfacing sensors with Arduino
- ✓ Programming Arduino
- ✓ Reading from Sensors

Project 1: Simple LED Program for Arduino

Project 2: Integrating Sensors & Reading Environmental Physical Values.

Project 3: Reading Environmental Values on Android Smartphone.

☐ Talking to your Android Phone with Arduino

- § Connecting Arduino with Mobile Device.
- § The Android Mobile OS.
- § Using the Bluetooth Module

Project 4: Voice Controlled Mini Home Automation using Android Smartphone

Project 5: Control Devices using Localhost Web Server for Home Automation

- § Integrating Ethernet Module & Testing DHCP Connection
- § Creating Program for Localhost Web Server for controlling devices.

Day 2

Project 6: Creating own Android App using MIT App Inventor & controlling Arduino connected devices.

Project 7: Being Social on Twitter & update status on Twitter through Arduino.

Project 8: Send Voltage & Analog Data on Cloud Server

Project 9: Use Arduino to Upload free data from Environmental Sensors to Cloud Server.

Project 10: Automatically Tweet Sensor based condition on Twitter.

Project 11: Receive Automatic Call Notification on Mobile Phone for Burglar Alarm using IoT Platform.

Project 12: Control Electronic Devices from anywhere across the world using Internet & Mobile App.

Duration: 2 Days (12-14 Hours)

Eligibility: The workshop is suited for students from all branches of Engineering. The pre-requisite for joining this workshop is zero, anyone can participate in this workshop.

Certification: During this whole event following Certificate will be provided:

- Certificate of Merit to all participants from **Technex'17 IIT Varanasi**
- At the end of this workshop, a small competition will be organized among the participating students and winners will be awarded with a 'Certificate of Excellence'.

Fee:

- **Rs 1350 per participant (With a takeaway IoT kit in a group of 4) Or Rs 900 per participant (without take away kit).**



IoT Workshop Arrangements Details:

- Seminar hall having a capacity enough to conduct hands-on-session for all participants.
- Good Quality public address system ideally two cordless mikes will be required.
- Projector/ Screen along with black/white board for teaching and presentation purposes.
- One small stereo jack cord to connect in laptop for its sound system.
- Participants need to bring their own laptop atleast 1-2 laptop per team with working wifi, usb & lan port.
- One Android Smartphone will be required per team with working Internet (3G Datapack) & Bluetooth in their phone.
- **Wifi Connectivity in Seminar hall for Trainers & Participants -- MANDATORY.**