



# IOT USING PYTHON

This workshop will introduce students to INTERNET OF THINGS from basic level to intermediate level.

## IOT Workshop Content

**Overview:** The Internet of things (IoT) is the network of physical devices, vehicles, buildings and other items—embedded with electronics, software, sensors, actuators, and network connectivity that enable these objects to collect and exchange data. IoT has promising applications for smart homes, wearable devices, smart cities, connected cars and more

The training program is a Hands-On Program with Practical learning focused on latest concepts on Internet of Things. Kits will be provided in a group of 4-5 students for practical knowledge and hands-on learning.

**Total Duration along with Cyber & Mobile Security session is 30 Hours Day 1**

## Understanding and Introduction to Raspberry Pi 3 (1Hrs)

- What is SOC?
- Versions of Raspberry Pi & Their Difference
- Raspberry Pi 3
- Basics of Electronics
- Hardware Description
- Downloading Image
- Study Various Operating Systems Available
- Making SD Card: Formatting and Partitions
- Raspberry Pi SD Installer

## • Pin Configuration

## OS Installation on SD Card (30Mins)

## OS Configuration

- Booting Into Desktop
- GUI Version
- CLI Desktop
- Changing Time zone
- Other Options
- Raspi-Config
- Test

## Network Setup

- Setting Up Using GUI
- Setting Up Using Command Line
- Finding Pi's IP Address
- Connecting with Wi-Fi/ LAN/ Data card

## Pi using SSH

- • Enabling SSH
- • Logging in using Putty
- • Run Basic Commands
- • Use GPIO

## Linux

- Understanding Linux
- File Structure
- Linux Commands
- Permissions

## Using Python with raspberry Pi 3

- Understanding Python
- Interpreted Languages
- Variables, Keywords, Operators and Operands
- Data Types in Python
- Flow Control
- Condition Statement
- Loops
- Importing Libraries
- Functions
- Classes

## GPIO

- Study GPIO Pins
- Libraries Using Git
- Configuring GPIO Pins

## Working with Different sensors.

## Project using raspberry Pi 3 and different sensors ( mini)

## Raspberry pi with Bluetooth

- Interfacing Bluetooth Module With raspberry pi
- Controlling Raspberry pi With Android Device

## Work with DHT sensors to detect humidity and temperature

## New addition with Microsoft certification on Python ,Using Python for web app for connecting with IOT devices.( in addition to the above topics )

- Perform troubleshooting and error handling.
- Perform operations using modules and tools
- Introduction to web frames works
- Flask
- Connecting with Think speak ( data visualization)

## Introduction to Thing speak

Creating Channels in Thing speak to update sensor information

Raspberry Pi Interfacing with Thing speak

Update Information of Sensors connected to Rpi in Thing speak

## Cyber Security 1 module

- How to secure your IOT network
- Introduction to Ethical Hacking
- Encryption and steganography
- Window hacking

- Facebook Password Security and hacking
- Mobile hacking

## Program Details

Training Duration :- 28-30hrs

Project :- Included in the program

Fees Rs :-2880 + GST:-

## With Microsoft MTA Certification on Python



For Online registration please visit

[www.atls.com](http://www.atls.com)



**ATLS Learning Solutions**



**L-107, First Floor, Lajpat Nagar Part -II,  
New Delhi 110024**