

# Internet of Things Powered by AI



## 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
- Pin Configuration

## 2. OS Installation on SD Card (30Mins)

- Downloading Image
- Study Various Operating Systems Available
- Making SD Card: Formatting and Partitions
- Raspberry Pi SD Installer

## 3. OS Configuration (30Mins)

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

## 4. Network Setup (30Mins)

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

## 5. GPIO (1hrs)

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

## 6. Pi using SSH (30Mins)

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

## 7. Linux (1Hrs)

- Understanding Linux
- File Structure
- Linux Commands
- Permissions

## 8. Using Python (4Hrs) 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
- Document and structure code
- Perform troubleshooting and error handling.
- Perform operations using modules and tools
- Introduction to web frames works
- Flask
- Connecting with Think speak ( data visualization)



## 10. Working with Different sensors

- PIR Sensor
- Touch Sensor
- Ultrasonic Sensor
- Speed Sensor
- Ultra Sonic Sensor

## 11. Module 1: Introduction to AI

In this module, you'll learn about common uses of artificial intelligence (AI), and the different types of workload associated with AI. You'll then explore considerations and principles for responsible AI development.

## 12. Artificial Intelligence using cloud

### Responsible AI

After completing this module, you will be able to:

Describe Artificial Intelligence workloads and considerations

## 13. Introduction to Machine Learning

Machine learning is the foundation for modern AI solutions. In this module, you'll learn about some fundamental machine learning concepts, and how to use the Azure Machine Learning service to create and publish machine learning models.

### Azure Machine Learning

## 14. Computer Vision

Computer vision is a the area of AI that deals with understanding the world visually, through images, video files, and cameras. In this module you'll explore multiple computer vision techniques and services.

### Computer Vision Concepts

### Computer Vision in Azure

## 15. kNN Introduction

### kNN Concepts

### kNN and Iris Dataset Demo

### Distance Metric

## 17. Project

## 18. One module on Cyber and mobile security



2880 + GST

## Program Details

Training Duration 40-50hrs

Project :- Included in the program

Fees Under Scholarship Rs :-



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