

# Technobotics Education Centre LLP

## Course: IOT Smart Farming

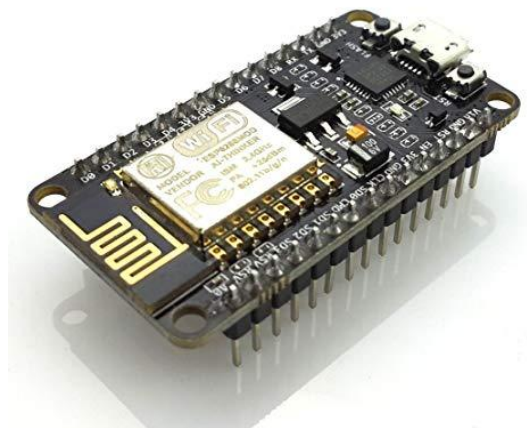
### Course Overview

This course on the Internet Of Things (IOT) helps to familiarize and understand the actual connected world around us. A world where our fitness connects, our fans and AC's connect, our refrigerators connect and almost every single electronic device we come across in our everyday life:- connects. But where do they connect to? How do they communicate? And most importantly how we can make something that works as a connected device. Webpages, Websites, URL's, Sending Requests and Receiving Responses and all such concepts are discussed in great detail.

**Course Duration: 2 - 3 sessions of 3 - 4 hours each**

### Course Details:

1. Introduction to IOT: Why, What, Where, How ?
2. The Cloud, WEB, Internet part of IOT.
3. The Hardware / Electronics part of IOT.
4. The App (like an Android App) part of IOT.
5. Introduction to NODE-MCU ESP12E.
6. Connecting to Local Wifi (Router / HotSpot).
7. Sending data to a Webpage.
8. Receiving data from a webpage.
9. Interfacing with Ultrasonic Distance Sensor.
10. IOT Based Water Level Monitoring.
11. Interfacing with Soil Moisture, Temperature and Humidity Sensor
12. Interfacing with electromechanical Relays.
13. IOT Based Smart Farming Integrated Project Setup..



## Knowledge and Conceptual Takeaways:

1. What is the Internet made up of ?
2. How does the Wi-Fi module work?
3. Different Operating Modes: Access point, Station, Dual.
4. Client Server architecture.
5. How does NODEMCU operate as a client / server ?
6. How to join a given Wifi network ?
7. How to send data to a webpage ?
8. How to read data from a webpage?
9. How to read a Digital Input on NODEMCU ?
10. How to read an Analog Input on NODEMCU ?
11. How to write Outputs on NODEMCU ?
12. Working of an Ultrasonic Distance / Level Sensor.
13. Working of a Temperature and Humidity sensor.
14. Working of Relay and interfacing of 220v AC Loads.
15. Interfacing various Sensors with NODEMCU.

## Materials Include:

1. Block Diagrams.
2. Circuit Diagrams.
3. Labeled Images of the Development Board.
4. Component List.
5. Detailed explanation of the Circuit.
6. Working of the Circuit and its components.

**Note:** All the soft resources needed to commence and complete the course will be provided by Technobotics. The student is only required to carry a Laptop with active Internet Connection. Apart from this all they need to have is a curious enough mind.