

## Microchip IoT Programming Foundations (MIoTFNDU)

### OVERVIEW:

This program is designed to empower professionals with the knowledge and skills essential for success in the rapidly evolving field of embedded systems.

This concise and focused course delves into the intricacies of utilizing microchip technologies in embedded systems, offering practical insights for real-world applications.

### HIGHLIGHTS:

- Programming steps are explained with real time industrial applications.
- It brings out and nourishes the ability to design and construct both hardware and software.
- Industrial Applications based Signal Converters.
- Tasks are based on the real time Application

**DURATION:** 40 hours

### TARGET AUDIENCE:

- Beginners and enthusiasts interested in learning embedded programming and its applications in IoT.
- Students pursuing any engineering degrees.
- Industry Professionals looking to enhance their skills in IoT with embedded platform.

### PRE-REQUISITES:

- Basic Embedded C programming skill
- Basic Electronics knowledge

### COURSE CONTENT:

#### **Module 1: Introduction**

- Introduction to Embedded Technology
- PIC16F877A

#### **Module 2: Introduction to Microchip**

- Architecture and Specifications
- Pin Details and configuration

#### **Module 3: GPIO based Peripherals**

- Led, seven segment programs
- Keypad interfacing
- LCD display

#### **Module 4: Signal Converters**

- Analog to Digital Converter

- Digital to Analog Converter
- Sensors and actuators interfacing

## **Module 5: Communication Protocols**

- Serial port communication protocol
- Inter Integrated Circuit protocol
- Serial peripheral Interface protocol

## **Module 6: Project work**

- Real time project work with simulation software

## **OUTCOMES:**

### **At The End of the Course the Learner Will**

- Have hands on experience using 8-bit microcontroller.
- Learn about the two wire communication protocols.
- Learn about analog to digital conversion
- Have a knowledge about sensors and actuators
- Gain Knowledge about PIC peripherals & its interfacing
- Design & develop real time application using embedded technology