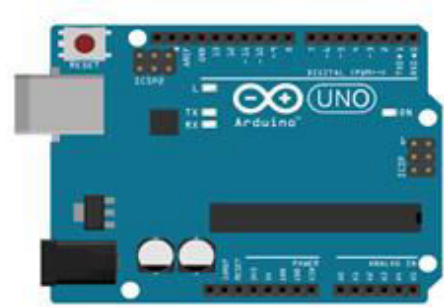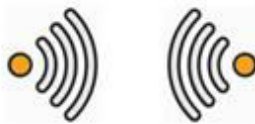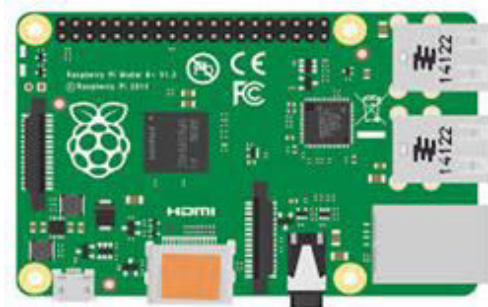# Embedded Technosolutions

Venture of IIT Bombay & VJTI Alumni

3 Times IIT Bombay Robo Competition Winner

Industrial Certified

Raspberry Pi IOT & Arduino Integration Program - Professional

Government of India (MSME) & IIT Bombay Alumni Recognized

MSME
सूक्ष्म, लघु एवं मध्यम उद्योग
MICRO. SMALL & ENTERPRISES
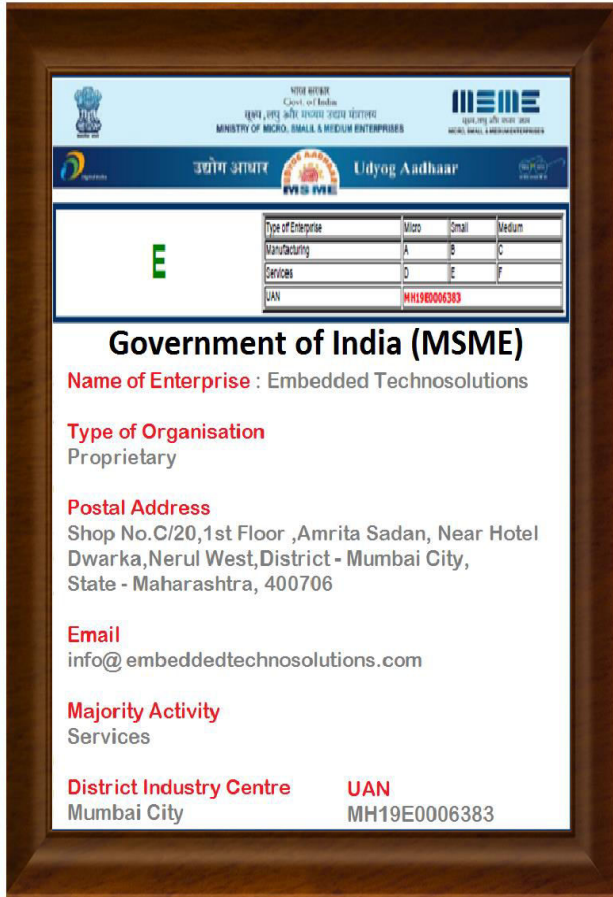

B R A N D
PROMISE

We Guarantee You that, You Can Develop Your Projects by Your Own After This Training Program

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EUROPACERT

Embedded Technosolutions

Shop No. C/20, 1st Floor, Amrita Sadan, Near Hotel Dwarka Nerul Railway Stations, Nerul West, Mumbai- 400706, Maharashtra, India

Has established and applies a Quality Management System for following scope of activities:

Imparting Engineering Professional Training And Engineering Project Exhibitions Engineering And Engineering Paper Publication

The Management System of the above organization has been audited and found to be in accordance with the requirements of management System Standards Detailed Below:

ISO 9001: 2015

Certificate Number: 14464

Issue Date : 21st September 2017

Expiry Date : 20nd September 2020

Certification Manager

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भारत सरकार
Govt. of India
सूक्ष्म, लघु और मध्यम उद्यम मंत्रालय
MINISTRY OF MICRO, SMALL & MEDIUM ENTERPRISES

उद्योग आधार **Udyog Aadhaar**

Type of Enterprise	Micro	Small	Medium
Manufacturing	A	B	C
Services	D	E	F
UAN	MH19E0006383		

E

Government of India (MSME)

Name of Enterprise : Embedded Technosolutions

Type of Organisation
Proprietary

Postal Address
Shop No.C/20,1st Floor ,Amrita Sadan, Near Hotel Dwarka,Nerul West,District - Mumbai City, State - Maharashtra, 400706

Email
info@ embeddedtechnosolutions.com

Majority Activity
Services

District Industry Centre   **UAN**
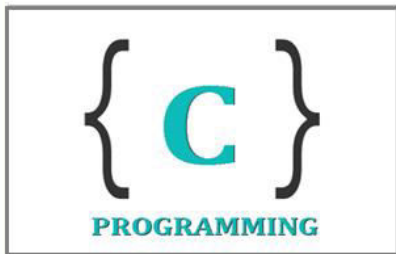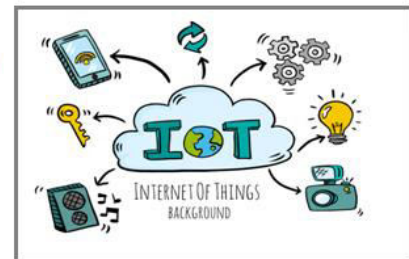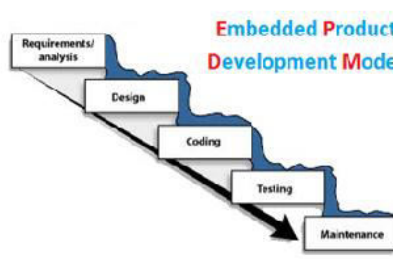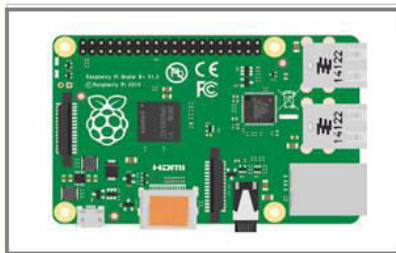Mumbai City   MH19E0006383

Government of India (MSME) & ISO 9001-2015
Approved Organisation
Running by IIT Bombay & VJTI Alumni

Embedded **T**echnosolutions

Venture of IIT Bombay & VJTI Alumni

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3 Times
IIT Bombay
Robo Competition
Winner

COURSE SYLLABUS

Embedded Linux With Raspberry Pi IOT

Module 1 : Raspberry Pi Set up & Configurations

- Program Raspberry Pi : a credit-card sized computer
- Python programming for Raspberry Pi
- Interacting and configuring the RPi OS
- ARM 11 architecture
- Porting of Linux Kernel and booting RPi

Module 2 : Linux Command for Application Execution

- Linux Programming Basics

Module 3 : Raspberry Pi GPIOs

- Programming the GPIO and interfacing peripherals With Raspberry Pi

Module 4 : PWM Generation

- Generating PWM signals through the Pi for Various applications

Module 5 : UART Protocol & Interfacing

- Programming and work with UART protocol ,example Bluetooth

Module 6 : I2C Protocol Interfacing & Applications

- Work with I2C protocol

Module 7 : Camera Interfacing & Applications Designing

- Camera Libraries & Driver Installations
- Camera based applications designing

Module 8 : Raspberry Pi Webserver

- Remote Login methods: HyperTerminal, Ethernet
- LED Operation Using IOT
- Embedded Webserver

Module 9 : Computer App Designing

- Developing GUI with TKinter

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Embedded Systems With

Arduino Control Unit

Chapter 1

- Introduction to Embedded System with Arduino

- Scope of Arduino in Embedded Systems

Chapter 2

- Introduction to Arduino series

- Hardware architecture of Arduino controller Series

- Controller I/O ports

- Memories of controller

- Concept of Serial communication ,Interrupt etc.

Chapter 3

- Introduction of Embedded Arduino Software

- Introduction of Embedded C Programming and programming concepts for Arduino

- Introduction of program flashing and error correction

Chapter 4

- I/O interfacing concept

- Led Blinking logic and delay generation routine

Chapter 5

- Character LCD 16x2 interfacing logic and concept

- Introduction of LCD command and data signals

- LCD based programming

- Practical project based on character LCD

Chapter 6

- Matrix keypad interfacing logic and concept

- Introduction of key pad interfacing using polling method

- Matrix keypad programming

- Practical project based on matrix keypad

Chapter 7

- Introduction to serial communication

- Serial communication concept

- Introduction of serial communication firmware and registers

- Serial communication programming

- Practical application based on Serial communication

Chapter 8

- Introduction of interrupts in controller

- Interrupt logic and concept

- Interrupt routines / programming

- Key interfacing using interrupt

- Practical application based on interrupt

Chapter 9

- Introduction of ADC

- ADC interfacing

- ADC programming

Chapter 10

- Introduction of DTMF mobile technology

- DTMF technology interfacing in real application

- DTMF programming

- Practical project design based on DTMF technology with Arduino

Chapter 11

- Introduction to RF & RFID communication

- RFID technology interfacing in real application

- RFID module programming

- Practical project design based on RFID technology with Arduino

Chapter 12

- Introduction of I2C Protocol

- I2C protocol interfacing in real application

- I2C module programming

- Practical project design based on I2C protocol with Arduino

Chapter 13

- Introduction of Bluetooth Communication

- Bluetooth technology interfacing in real application

- Bluetooth module programming

- Practical project design based on Bluetooth technology

Chapter 14

Practical designing of a project based on above technology with Arduino

	Live Projects : **Raspberry Pi IOT Based**
1	Traffic Light System
2	Environmental Parameters Measurement
3	Voice Control Home Automation
4	BlueSys using Bluetooth
5	Wireless Mobile Smart System
6	PWM Based Variable System
7	Camera based Surveillance System
8	GUI Based Home Automation using TKinter

	Live Projects :
	Embedded Arduino Based
1	Traffic Light System
2	RFID Security System Based Door Authentication
3	DTMF Technology Based Universal Home Automation
4	Wireless Appliance Controlling System using Android App
5	Notice Board
6	Room Temperature Controlling System with PC Interface
7	Password Protected Locker System