



# Embedded Systems & Internet of Things with Robotics

4 Weeks / 30 Hours Job oriented exhaustive program

# Offline Classroom Training Program

New Delhi | Lucknow | Bhubaneswar | Bhopal

To be conducted in February, March & April of 2021

#### **EISYSTEMS SERVICES**

FF-113, Express Greens Plaza, Sector 1, Vaishali, Ghaziabad
Uttar Pradesh – (Delhi NCR) – 201010 - India
W: www.eisystems.in | E: info@eisystems.in | P: +91 9773976977



# **About ElSystems**

ElSystems Services is a leading Indian technology identity with operations in 16 states and union territories of India. ElSystems (We call it ElSys) offers computer forensics, automobiles, robotics and socialmedia related solutions for enterprises and and student community. Our retail domain "Robokwik" have been in among top self learning products provider brands in India. We have trained about 70000 students and impacted around 2 lakhs students through our various outreach initiatives since our founding.

## **Our Clientale**

Some of the colleges where we had already felt our presence are given below:-

Indian Institute of Science, Bangalore

Indian Institute of Technology, Bombay

Indian Institute of Technology, Delhi

Indian Institute of Technology, Madras

Indian Institute of Technology, Kanpur

Indian Institute of Technology, Roorkee

Indian Institute of Technology, Guwahati

Indian Institute of Technology (Banaras Hindu University), Varanasi

Indian Institute of Technology, Indore

Indian Institute of Technology, Jodhpur

Indian Institute of Technology, Hyderabad

National Institute of Technology, Tiruchirappalli

National Institute of Technology, Warangal

National Institute of Technology, Calicut

National Institute of Technology, Patna

National Institute of Technology, Jalandhar

National Institute of Technology, Jaipur

National Institute of Technology, Durgapur

National Institute of Technology, Surat

National Institute of Technology, Allahabad

Indian Institute of Information Technology, Allahabad

ABV- Indian Institute of Information Technology & Management, Gwalior

PDP- Indian Institute of Information Technology & Management, Jabalpur

College of Engineering Guindy, Anna University, Chennai

PSG College of Technology, Coimbatore

JNTUH College of Engineering, Hyderabad

**SRM University** 

and more than 100 engineering colleges across India.



# **Prerequisites**

Participants from 1<sup>st</sup> year/ 2<sup>nd</sup> year / 3<sup>rd</sup> year / 4<sup>th</sup> year of CSE/IT/MCA/BCA/BSc IT/ECE branch will get more benefited after joining this program.

# What to bring during training program?

Here's the checklist

- 1. Fully charged laptop with Microsoft Windows configuration.
- 2. Laptop Charger/ Adapter
- 3. USB Mouse for designing purpose.

## What we are expecting for COVID19 prevention?

During visit at our center we expect students / interns :-

- 1. To wear facemask during training session enough to cover mouth & nose.
- 2. To have a bottle of sanitizer all the time.
- 3. To come with a bottle of drinking water with enough water as it will not be provided at center.
- 4. To show status of Aarogya Setu app daily, without which entry will not be allowed.
- 5. Not to use or atleast discourage using of washroom at center.
- 6. To follow social distancing norms and follow all government guidelines regarding COVID19 prevention.
- 7. To come with surgical / disposable gloves for working on kit.

## **Training Deliverables**

Every participant will get all under mentioned deliverables

- 1. 30 hours classroom training by specialized trainer.
- 2. Certificate of Internship with project mentioning on it.
- 3. Printed Study Material Booklet
- 4. EISystems Access ID Card & Stylish Storage Folder
- 5. Notepad & Pen
- 6. Kit will be provided for training duration for lab session only and it not a part of material deliverables to home.



## Fees & Discounts

There are multiple type of discount(s) available as mentioned below:-

## **Category 1: Single / Individual Entry**

Installments	Amount
First Installment	Rs. 1000 per participant only
Second Installment	Rs. 6999 per participant only
Total Fees	Rs. 7999 per participant only

## Category 2: Group Discount (2 to 4 Members Group)

Installments	Amount
First Installment	Rs. 1000 per participant only
Second Installment	Rs. 5499 per participant only
Total Fees	Rs. 6499 per participant only

## **Category 3: Access Card Discount**

This discount will be valid for all aspirants having EISystems Internship Certificate.

Installments	Amount
First Installment	Rs. 1000 per participant only
Second Installment	Rs. 5000 per participant only
Total	Rs. 6000 per participant only

#### **Important**

Second installment need to be paid within 3 days of starting of first class and it can be paid either at center or online through website.

## **How to pay Confirmation fees?**

The payment of registration fees can be made using undergiven modes:-

Credit Cards / Debit Cards
Net banking
Ola Money
PayTM / Google Pay / PhonePe

Please visit www.eisystems.in/sitp/payment.php for instant payment & more details.



# **Course & Content**

All of the sessions will be practical oriented, so it will be really great if participant(s) can look on the syllabus which we are going to cover during training days.

S.No	Topic	Sub Topic
	Introduction of Embedded System	Introduction of Embedded System
		Why do we Embedded System?
1.		Microcontroller
		Microprocessor
		Microcontroller Vs Microcontroller
		BASIC introduction of C
		If, if else, for and while
		Bitwise operators and logical operators
		Array and String
2	Introduction of Embedded C	Introduction to Arduino
_		Architecture of Arduino
		Digital Input and output pins
		Interfacing Output Devices with Arduino
		Interfacing Input Devices With Arduino
		Introduction of Serial Communication
		Controlling Devices using Computer And Android Mobile Phone
		Introduction to Arduino
		Architecture of Arduino
	Working with Arduino	Digital Input and output pins
3		Interfacing Output Devices with Arduino
		Interfacing Input Devices With Arduino
		Introduction of Serial Communication
		Controlling Devices using Computer And Android Mobile Phone



		Electronics vs Electrical
		Voltage ,Current ,Resistance and Capacitance
		Digital Logic and TTL Logic
		Introduction of Multimeter
		Power Supplies (Electrical and Batteries)
		Various type of Diode and its application
4	Basic Electronics	Application of BJP
		Switches usingnpn and pnp
		Relays
		Application of Logic Gate
		IR Sensor
		Temperature Sensor,
		Ultrasonic Sensor
		PIR
		DHT11
5	Introduction of Various Type of	LDR
	Sensor/Motor	Touch Sensor
		Water Lever Indicator
		Color Sensor
		DC Motor,Stepper Motor and Servo Motor
		Smoke Sensor

	IR Sensor, Temperature Sensor, Ultrasonic Sensor	
	Interfacing Led	
	6 Interfacing I/O	Interfacing Digital Sensor
		Interfacing Analog Sensor
6		Interfacing Buzzer
		Interfacing Motor
		Interfacing Servo Motor
		Motor Interfacing
		AC, DC, Stepper, servo motor concept and its operation.
		Motor drive IC L293D

### **EISYSTEMS SERVICES**



		Controlling Direction of Rotation of a Motor
		Type of Lcd
7		Intro to LCD
		Display character and string on LCD
	LCD Interfacing	Display digit on LCD.
		Moving pattern on LCD
		Creating simple animation on LCD.
		Printing symbol on LCD
		Printing Hindi Character
		Intro to Serial Communication.
		RS-232 Protocol.
	Introduction of Serial	Programming of Serial Communication
8	Communication	Controlling Device Using Serial Communication.
		Interfacing Bluetooth
		Controlling Devices using laptop and Mobile phone
		Intro to Relay
	Introduction of Relay	Working of Relay
9		Interfacing Relay with Arduino
		Controlling home appliances using Arduino and Relay
		Introduction of IOT
		Why do we need IoT?
10	Introduction of IOT	Role of IoT In Various Field
		Application of IOT
		Future Scope of IOT
		Architecture Of IOT

		Architecture of NodeMCU
	Introduction of NodeMCU	Interfacing I/o Devices with NodeMcu
		Connecting nodemcu with wifigatway.
11		Server ,client Configuration.
	12 Practical/ Hands on Session	BLACK LINE FOLLOWER ROBOT
		WHITE LINE FOLLOWER ROBOT
		COLOR LINE FOLLOWER ROBT
12		EDGE AVOIDANCE ROBOT
12		WALL FOLLOWER ROBOT
		SOUND OPERATED ROBOT
		CLAP ON STOP ROBOT
		CLAP ON START ROBOT

### **EISYSTEMS SERVICES**



	OBSTACLE SENSING ROBOT High Temperature Alarm Password Controlled Application Mobile Controlled AC Device
	Interfacing IR, Temperature, Ultrasonic and PIR Sensor
	Visitor Counter
	Controlling Home Appliance using Android Phone
	Voice Control Home Automation
PROJECTS	Motion Detector using PIR Sensor
TROJECTS	Collecting Sensor Data on Thingspeak Cloud
	Controlling Devices using Web page
	Collecting Sensor Data on Thingspeak Cloud
	Send Data From Node-mcu to the Webpage
	Distance Measurement

#### **Updation & Duration of Course**

The course (given above) is a proposed structure and we are currently working to update it considering industry requirements, we may add / delete / modify sessions in it without any prior notification. The training program will be divided into two parts i.e. course period and project period however total duration of program will remain 4 weeks only.

#### Disclaimer

A session doesn't necessarily depict the day count or the day on which it is going to be covered, we may cover more than or lesser than one session in a day and even alter/amend the schedule by rearranging of session(s) by removing/adding anything from/to overall course, the course structure may differ center wise, Also this is to notify that Eisystems Services is nowhere specifying that center in Varanasi will be IIT BHU campus, our center in Varanasi is different. Fees once paid will not be refunded, Please check our refund policy given on website for more details. Please checkout given terms and conditions on our website www.eisystems.in/sitp before proceeding for payment