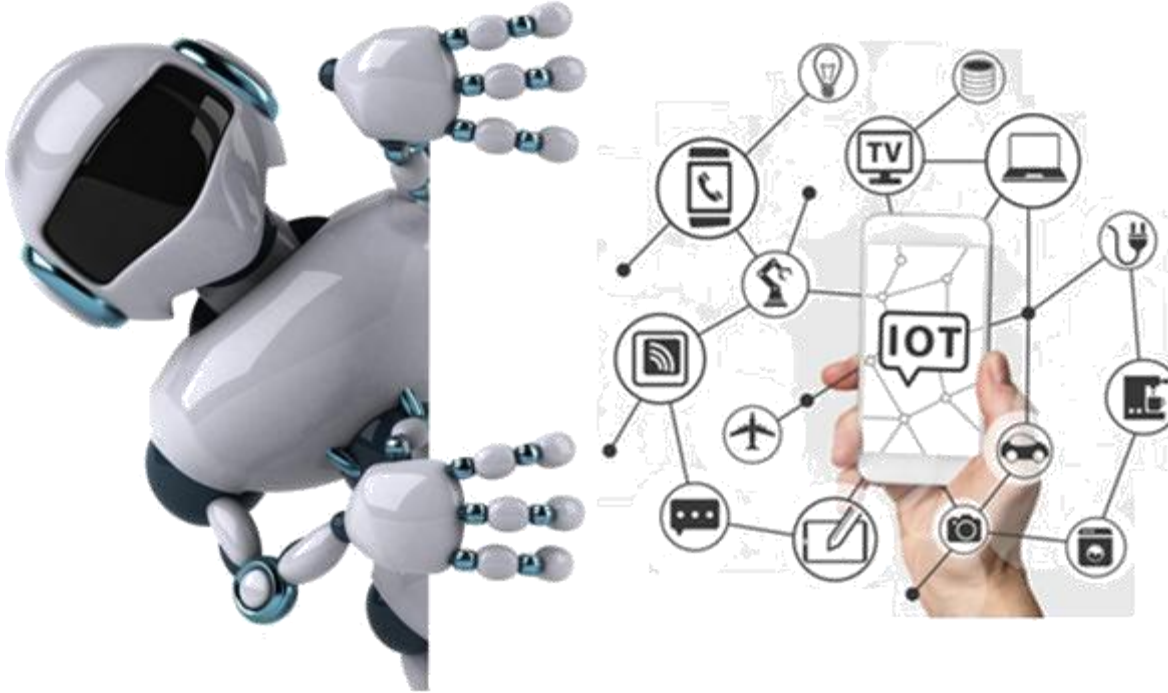




THE ANNUAL TECHNO-MANAGEMENT FEST, IIT (BHU) VARANASI

# TECHNEX'19

Internship & Training Program



## Embedded Systems & Internet of Things with Robotics

2 Weeks / 32 Hours

Job oriented exhaustive program

### Winter Internship & Training Program

Bengaluru – Bhubaneswar – Bhopal – Lucknow

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Delhi NCR – 201010 - India

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## Internship & Training Program

### About EISystems

EISystems Services is a leading Indian technology identity with operations in 16 states and union territories of India. EISystems (We call it EISys) offers computer forensics, automobiles, robotics and socialmedia related solutions for enterprises 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 Clientele

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.

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**Internship & Training Program**

## Prerequisites

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

## What to bring during training program?

Here's the checklist

1. A laptop with Microsoft Windows configuration.
2. Laptop Charger/ Adapter for charging purpose.
3. USB Mouse for designing purpose.

## Post Training Deliverables

Every participant will get all under mentioned deliverables

1. Certificate of Internship from Eisystems Services & Technex IIT BHU Varanasi
2. Software Package with booklet for Laptop/Tab.
3. Printed Study Material Booklet
4. Access ID Card
5. Notepad & Stylish Storage Folder

## Fees & Discounts

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

### GROUP BASED DISCOUNTS

#### Category 1: Group Discount (2 to 7 Members Group)

Installments	Amount
First Installment	Rs. 1000 per participant only
Second Installment	Rs. 4300 per participant only
<b>Total</b>	<b>Rs. 5300 per participant only</b>

### INDIVIDUAL BASED DISCOUNTS

#### Category 2: Single / Individual Entry

Installments	Amount
First Installment	Rs. 1000 per participant only
Second Installment	Rs. 4500 per participant only
<b>Total</b>	<b>Rs. 5500 per participant only</b>

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## How to pay Confirmation fees?

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

### Online Mode

Credit Cards / Debit Cards  
Net banking  
Ola Money  
PayTM

To pay fees, kindly check Payment link on Email / Website.

### Offline Modes

Direct Bank Deposit in Kotak Mahindra Bank

Step 1: Go to any Kotak Mahindra Bank near you.

Step 2: Fill the Pay-In-Slip with required amount and undergiven account number

Step 3: Deposit the amount in bank account, the details of it are given below:-

Bank Name	:Kotak Mahindra Bank
Account Name	:EISYSTEMS SERVICES
Account Number	:2011117760
IFSC Code	:KKBK0000149
Type	:Current
Branch	:Mathura

Step 4: Take the countersigned Pay-In-Slip from bank counter with valid seal and transaction number and write the name of participants on the back side of it.

Step 5: Scan both sides of Pay-In-Slip and send it to [internship.eisystems@gmail.com](mailto:internship.eisystems@gmail.com) along with information of each attendee on that payment slip like Name, Phone Number, Email Address, Course Name, Center, City.

Step 6: Keep this payment slip with you and we will collect it at the time of registration otherwise we may not consider your registration.

### Important Note

One Kit will be given in a group of 4/5 students irrespective of their chosen fees plan and this kit will be for training duration only.

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## Course & Content

S.No	Topic	Sub Topic
1.	<b>Introduction of Embedded System</b>	Introduction of Embedded System
		Why do we Embedded System?
		Microcontroller
		Microprocessor
		Microcontroller Vs Microcontroller
2	<b>Introduction of Embedded C</b>	BASIC introduction of C
		If, if else, for and while
		Bitwise operators and logical operators
		Array and String
		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
		3
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		

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

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## Internship & Training Program

6	Interfacing I/O	IR Sensor, Temperature Sensor, Ultrasonic Sensor
		Interfacing Led
		Interfacing Digital Sensor
		Interfacing Analog Sensor
		Interfacing Buzzer
		Interfacing Motor
		Interfacing Servo Motor Motor Interfacing AC, DC, Stepper , servo motor concept and its operation. Motor drive IC L293D Controlling Direction of Rotation of a Motor
7	LCD Interfacing	Type of Lcd
		Intro to LCD
		Display character and string on LCD
		Display digit on LCD.
		Moving pattern on LCD
		Creating simple animation on LCD.
		Printing symbol on LCD
Printing Hindi Character		
8	Introduction of Serial Communication	Intro to Serial Communication.
		RS-232 Protocol.
		Programming of Serial Communication
		Controlling Device Using Serial Communication.
		Interfacing Bluetooth
		Controlling Devices using laptop and Mobile phone
9	Introduction of Relay	Intro to Relay
		Working of Relay
		Interfacing Relay with Arduino
		Controlling home appliances using Arduino and Relay
10	Introduction of IOT	Introduction of IOT
		Why do we need IoT?
		Role of IoT In Various Field
		Application of IOT
		Future Scope of IOT
	Architecture Of IOT	

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		Architecture of NodeMCU
11	Introduction of NodeMCU	Interfacing I/o Devices with NodeMcu
		Connecting nodemcu with wifigatway.
		Server ,client Configuration.
12	Practical/ Hands on Session	BLACK LINE FOLLOWER ROBOT
		WHITE LINE FOLLOWER ROBOT
		COLOR LINE FOLLOWER ROBT
		EADGE AVOIDANCE ROBOT
		WALL FOLLOWER ROBOT
		EDGE DETECTOR ROBOT
		SOUND OPERATED ROBOT
		CLAP ON STOP ROBOT
		CLAP ON START ROBOT
		OBSTACLE SENSING ROBOT
		High Temperature Alarm
		Password Controlled Application
Mobile Controlled AC Device		
	PROJECTS	Interfacing IR, Temperature, Ultrasonic and PIR Sensor
		Visitor Counter
		Controlling Home Appliance using Android Phone
		Voice Control Home Automation
		Motion Detector using PIR Sensor
		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		

**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 and Technex which is an annual techno entrepreneurship festival of IIT BHU Varanasi is a certification partner for this internship program. Fees once paid will not be refunded except in case of cancellation of training program or as given in terms and conditions.

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