



## Embedded Systems with Robotics & Internet of Things

4 Weeks / 30 Hours

Offline / Classroom

Internship & Training Program

Delhi-NCR | Lucknow | Bhubaneswar | Bhopal | Varanasi

Official Partner



**EISYSTEMS TECHNOLOGIES**

FF-113, Express Greens Plaza, Sector 1

Vaishali, Ghaziabad (Delhi NCR), Uttar Pradesh -201010

P: +91 9773976977 | E: info@eisystems.in | W: www.eisystems.in

## Internship & Training Program

### About EISystems

EISystems Technologies is a leading Indian technology identity with operations in 16 states and union territories of India. EISystems (We call it EISys) offers trainings in Machine Learning, Internet of things, Deep Learning, Computer Forensics, Automobiles, Robotics and Socialmedia related solutions for enterprises and student community. Our online edtech 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, Bhubaneswar  
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  
College of Engineering Guindy,  
Anna University, Chennai  
PSG College of Technology, Coimbatore  
JNTUH College of Engineering, Hyderabad

and more than 100 other engineering colleges.

Official Partner



**EISYSTEMS TECHNOLOGIES**

FF-113, Express Greens Plaza, Sector 1

Vaishali, Ghaziabad (Delhi NCR), Uttar Pradesh -201010

P: +91 9773976977 | E: info@eisystems.in | W: www.eisystems.in

## 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 CSE/IT/ECE/EEE/EN 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 use Aarogya Setu app otherwise 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.

### 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. EISystems Access ID Card & Stylish Storage Folder
4. Notepad & Pen

Official Partner



**EISYSTEMS TECHNOLOGIES**

FF-113, Express Greens Plaza, Sector 1

Vaishali, Ghaziabad (Delhi NCR), Uttar Pradesh -201010

P: +91 9773976977 | E: info@eisystems.in | W: www.eisystems.in

## Internship & Training Program

### 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.

#### Session 1

##### Embedded Systems

- Introduction of Embedded Systems
- Why do we need Embedded Systems?
- Microcontrollers
- Microprocessors
- Microcontroller Vs Microcontroller

#### Session 2

##### Embedded C Programming

- Introduction to Embedded C
- Basic Introduction of C
- If, If Else, For and While
- Bitwise operators and logical operators
- Array and String

#### Session 3

##### Arduino

- Working with Arduino
- 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 & Android Mobile Phone

#### Session 4

##### Basic Electronics

- Electronics vs Electrical
- Voltage ,Current ,Resistance and Capacitance
- Digital Logic and TTL Logic
- Introduction to Multimeter
- Power Supplies (Electrical and Batteries)
- Various type of Diodes and its application
- Application of BJT
- Switches usingn pn and pnp
- Relays
- Application of Logic Gate

Official Partner



**EISYSTEMS TECHNOLOGIES**

FF-113, Express Greens Plaza, Sector 1

Vaishali, Ghaziabad (Delhi NCR), Uttar Pradesh -201010

P: +91 9773976977 | E: info@eisystems.in | W: www.eisystems.in

## Internship & Training Program

### Session 5

#### Introduction of Various Type of Sensor/Motor

- IR Sensor
- Temperature Sensor,
- Ultrasonic Sensor
- PIR Sensor
- DHT11 Sensor
- LDR Sensor
- Touch Sensor
- Water Level Indicator
- Color Sensor
- Smoke Sensor

- Types of Motors
- DC Motors
- Stepper Motors
- Servo Motors

### Session 6

#### Interfacing I/O Devices

- LEDs
- Digital Sensors
- Analog Sensors
- Buzzer
- Motor
- Servo Motors
- Other type of Motors (AC, DC, Stepper)
- Motor Driver - IC L293D
- Controlling direction of rotation of motor

### Session 7

#### LCD & its interfacing

- Introduction to LCD
- Types of LCD
- Display Character and String on LCD
- Display digit on LCD
- Moving Pattern on LCD
- Creating Simple Animation on LCD.
- Printing symbols on LCD
- Printing Hindi Character

Official Partner



**EISYSTEMS TECHNOLOGIES**

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

## Internship & Training Program

### Session 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

### Session 9

#### Introduction of Relay

- Introduction of Relay
- Working of Relay
- Interfacing Relay with Arduino
- Controlling home appliances using Arduino and Relay

### Session 10

#### Introduction of IoT

- Why do we need IoT?
- Role of IoT In Various Field
- Application of IOT
- Future Scope of IOT
- Architecture Of IOT

### Session 10

#### NodeMCU

- Introduction of NodeMCU
- Architecture of NodeMCU
- Interfacing I/O Devices with NodeMCU
- Connecting nodemcu with wifigateway.
- Server - Client Configuration.

Official Partner



**EISYSTEMS TECHNOLOGIES**

FF-113, Express Greens Plaza, Sector 1

Vaishali, Ghaziabad (Delhi NCR), Uttar Pradesh -201010

P: +91 9773976977 | E: info@eisystems.in | W: www.eisystems.in

## Internship & Training Program

### Practical/ Hands on Session

- Black Line Follower Robot
- White Line Follower Robot
- Color Line Follower Robot
- Edge Avoider Robot
- Wall Follower Robot
- Sound Operated Robot
- Clap on Stop- Clap on Start Robot
- Obstacle Detector Robot
- High Temperature Alarm
- Password Controlled Application
- Mobile Controlled AC Device

### PROJECTS

- 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 Webpage
- Collecting sensor data on Thingspeak Cloud
- Sending Data from NodeMCU to webpage
- Distance Measurement System

Official Partner



**EISYSTEMS TECHNOLOGIES**

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

**Internship & Training Program**

**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 internship program is divided into two parts i.e. training period (2 weeks) and project period(2 weeks) 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 Technologies is nowhere specifying that center in Varanasi will be IIT (BHU) Varanasi campus, our center in Varanasi is different. Fees once paid will not be refunded, Please check our refund policy given on website before proceeding for payment. It is important to note that IIT (BHU) Varanasi or any of its body is not charging anything for this training program and whatever amount which you will be paying will either go to Eisystems Technologies or its associates or both.

**COVID-19 Policy**

No amount will be refunded in case of non conduction of program due to government guidelines for COVID-19 prevention and instead remaining / all sessions will be conducted online through mentor led training however we will also give flexibility to students/ attendee to continue the remaining session when things normalize at other center.

**Official Partner**



**EISYSTEMS TECHNOLOGIES**

FF-113, Express Greens Plaza, Sector 1

Vaishali, Ghaziabad (Delhi NCR), Uttar Pradesh -201010

P: +91 9773976977 | E: info@eisystems.in | W: www.eisystems.in