The IoT Academy
Connecting The Unconnected

2021

1.5 Months

IoT Training Brochure

Connecting The Unconnected

+91 9354068856 enquiry@theiotacademy.co www.theiotacademy.co

ABOUT US

We are a fast emerging company imparting quality and affordable programs for colleges and individuals for digital economy skills training, internship and guidance focused on helping people develop the skills they need to thrive in the rapidly growing digital economy.

'The IoT Academy' has made a niche name for itself providing rigorous online training in Internet of Things (IoT), embedded systems, Big Data, Data analytics, Industrial IoT, Industry 4.0, Python, Artificial Intelligence, Digital marketing and Machine Learning. Based in Delhi NCR since 2017 we have helped 150+ professionals, 600+ students and 100+ faculties across the states get trained, acquIRe certifications, and upskill theIR employees.

MISSION

We aspIRe to provide learners an edge over the career they choose to stand out amongst today's competitive world through support in training and various academic and industrial collaborations.

VISION

At IoT Academy We believe that the future is about Unified and Converged technologies as reflected in our mission statement. Every aspect of life will eventually lead in bringing forth a unified world of immense possibilities.

Our Services

For Educational Insitutes

Lab Setup

We provide hardware and support in lab setup for IoT and LPWAN.

Workshop/Seminars

We conduct workshop and seminars on emerging technologies which are given by industry experts.

Center of Excellence

Under our 'Center of Excellence' offering we provide all the services apart from encouraging R&D and entrepreneurship efforts by guiding both faculty and students.

Faculty Training

We provide training to faculties of educational institutes under our 'Faculty Development Program' so that they become aware of how new technology is used in industry and they can impart the same knowledge to their students

Student Training

We provide training to students on various topics including the emerging technologies which are targeted towards making them more relevant and employable as per the industry.

Our Services

For Students

Internships

We provide interships to students where they are able to work in a professional environment and learn a lot.

Projects

We help students design and implement projects whether a small one or a big one on any topic within the scope of all the subjects that we provide training for.

Placements

Our complete training programs comes with 100% placement guarantee as the courses are designed specifically keeping enhancing skills for jobs in mind.

Summer/Winter Training

Short duration trainings during summer and winter breaks are designed keeping school & college students in mind. Our aim is to give in-depth knowledge to students on a particular topic of their choice within the time frame.

Training

We provide training to students on various topics including the emerging technologies which are targeted towards making them more relevant and employable as per the industry.

Educational Partners

E&ICT, IIT Kanpur

E&ICT, IIT Guwahati

E&ICT, IIT Roorkee

NIT Patna

ASTU University

J.S.S. Noida

IPEC

BVM Engineering College

BVP Pune

Jamia Hamdard

ITS Ghaziabad

VSSUT Odisha

JIIT Noida

JNTU Hyderabad

VIGNAN'S

Corporate Partners

Our Placements

Congratulations!

To our students who have worked so hard to be placed within the Top Companies.

Prakhar Maheshwari
Capgemini

Saumya Singh
Bosch

Anjuli Agarwal
TCS

Yogesh Mishra
UniConverge Technologies

Tanu Chinwan
Capgemini

Raghav Aggarwal
Aerogram

Vaishali Singh
eWandzDigital Services

Ayush
TCS

Course Curriculum

01 Introduction to IoT

- Introduction to IoT
- IoT and Its Application
- How M2M is different from IoT
- Components of IoT
- IoT Devices
- IoT Communication Protocols
- IoT and Its Future

03 Embedded System And IoT

- What Is Embedded System?
- What Is Microcontroller?
- 8/16/32 Bit Microcontrollers
- Hardware For IoT – Nodemcu, Raspberry-Pi
- Hardware & Software Protocols

05 Introduction To Online Simulator

- How To Build CIRcuits On Simulator
- How To Write Program On Simulator
- Basic Electronics CIRcuits

07 Introduction To Nodemcu

- Install Arduino Ide Software
- Programming Of Arduino
- Integration Of Nodemcu Board To Arduino Ide
- Programming Of Nodemcu

08 Introduction To Communication

- Serial Uart/Usart Communication
- I2c (Twi) Communication
- Spi Communication

09 Measuring Temperature

- Tmp36 Sensor
- Interfacing Of Tmp36 Sensor With Arduino

02 Embedded C

- Datatypes
- Global And Local Variable
- Keywords
- Storage Class
- Memory Map
- Volatile
- Operators
- Flow Control
- Loops
- Function
- Array
- String
- Pointer
- Structure
- Union
- Enum

04 Introduction To Arduino

- Getting To Know The Arduino Uno: Pins, Power, Clock
- Using The Digital Output Pins
- Using The Digital Input Pins
- Using The Analog Input Pins
- Using The Analog Output Pins(Pwm)

06 Arduino Programming

- An Introduction To Arduino Programming
- Understand The Basic Parts Of An Arduino Sketch
- Digital Output - How To Control An Led
- Digital Input - How To Read The State Of A Button
- Analog Input - How To Read The State Of A Potentiometer
- Analog Output - How To Create A Fading Led

10 Detecting Objects With The Infrared Sensor

- Introduction To The Passive Infra-Red (PIR) Motion Sensor
- A Simple PIR Experiment With An Led
- A Demonstration Of Using The PIR Sensor With The Arduino
- PIR Sensor Demonstration Sketch Walkthrough

12 Keypad (4*4)

- Hardware Overview – Membrane Keypad
- Pinout Of 4×4 Membrane Keypad
- How Keypad Works & How To Scan Them?
- WIRing 4×4 Membrane Keypad With Arduino
- Installing Keypad Library
- Arduino Code

14 Servo Motor

- What Is Servo?
- How Servo Motors Work?
- Servo Motor Pinout
- WIRing Servo Motor To Arduino Uno
- Arduino Code

16 IoT Communication

- Machine To Machine Communication (M2m)
- Advantages & Disadvantages
- Types
  - **Bluetooth**
  - **Wi-Fi**
  - **Radio Frequency (Rf Channel)**
  - **Zigbee**
  - **Lora Wan**
  - **Nfrc (Near Field Radio Frequency**)

11 Measuring Distance

- Introduction To Ultrasonic Distance Sensor
- Writing And Understanding Trigger And Echo
- How To Calculate Distance

13 The Liquid Crystal Display

- Introduction To The Lcd
- Lcd WIRing In 4-Bit Parallel Mode
- Lcd Demonstration Sketch
- Display Sensor Data In The Lcd

15 Gas Sensor

- What Is Mq2 Gas Sensor?
- Internal Structure Of Mq2 Gas Sensor
- How Does A Gas Sensor Work?
- Hardware Overview – Mq2 Gas Sensor Module
- Calibrate Mq2 Gas Sensor Module
- Mq2 Gas Sensor Module Pinout
- WIRing – Connecting Mq2 Gas Sensor Module To Arduino Uno
- Code

17 IR Remote And IR Sensor(Tsop)

- What Is Infrared?
- How IR Remotes And Receivers Work
- IR Signal Modulation
- IR Transmission Protocols
- IR Codes
- How To Connect An IR Receiver To The Arduino
- Programming The IR Receiver

18 Thingspeak IoT Cloud Platform

- Introduction About Thingspeak
- Cloud Setup
- Send Data On Thingspeak
- Thingspeak Dashboard

19 IoT-Security

- **Authentication**
  - Overview Of Authentication
  - Why It Is Needed
  - Different Ways Of Authentication
  - Testing Them With Bruteforce Tools
  - Examples
  - Implementation On IoT Devices
- **Remote Debug**
  - Remote Connectivity Of IoT Device
  - Retrieving Debug Logs For Error Codes
  - Include In Remote Code In IoT Devices
- **Encryption**
  - Types Of Encryption
  - Simple And Best Usage
  - Examples
- **Privacy**
  - Overview Of Privacy
  - How It Is Being Implemented
  - Publishing Data Over Cloud
  - Examples
- **Authorization**
  - Overview
  - How Is It Is Implemented In IoT And Cloud
  - Implementations Examples

20 IoT Protocols

- **Https/Rest – Ipv4 Ipv6**
  - Advanced Networking
  - Webserver
  - Rest Client
- **Amqp – Azure IoT Sdk**
  - Usage Of Amqp For Microsoft Azure Cloud
  - Advantages And Disadvantages
  - Best Practices And Usages Of Amqp
- **Mqtt – Mosquito Mqtt**
  - Usage Of Mqtt For Transporting Data To Cloud
  - Advantages And Disadvantages
  - Best Practices And Usages Of Mqtt
- **Coap**
  - Usage Of Coap Protocol
  - Advantages & Disadvantages
  - Best Practices And Usage

21 Introduction To Node-Red

- What Is Node-Red?
- History Of Node-Red
- Why We Need Node-Red?
- Installation Of Node-Red

22 How To Use Node-Red?

- Basic Nodes
- Input-Output Nodes
- Inject Node
- Debug Node
- Function Node
- Dashboard Setup

23 Mosquitto Local Broker (Hands-On)

- Mosquitto Local Broker Installation
- Mqtt Nodes In Node-Red
- Connection Between Local Broker And Node-Red

24 Broker On The Cloud (Hands-On)

- Dashboard Introduction
- Connection With Broker

25 IBM Bluemix IoT Platform

- Introduction To IBM Bluemix
- How Does Bluemix Work?
- IBM Cloud Setup
- Installation Of Pub-Sub Client Library
- Installation Of Arduinojson Library
- Dashboard Setup
- Live Data Visualisation On Dashboard

26 Raspberry-Pi Interfacing & Python Programming

- Flash The Raspberry Pi Os The Micro-Sd Card
- Setup Wi-Fi And Ssh DIRectly On The Micro-Sd Card
- Boot Your Raspberry Pi For The FIRst Time And Find Its Ip Address
- Connect To Your Pi Using Ssh
- Update - Before You Watch The Next Lesson On Vnc
- Setup Vnc To Get A Remote Access To Your Raspberry Pi Os Desktop
- Finish The Start-Up Configuration

27 Program With Python 3

- Variable
- Function
- Condition
- Loops
- List

28 Interfacing

- Gpios
- Input
- Actuators
- Switchs

29 Projects

- Home Automation With Password System
- Gas Detecting Alarm System
- Social Distancing Indicator And Alarming System
- Temperature Based Fan Speed Controller
- Case Study On Smart EnvIRomentsl Monitoring Using Thingspeak IoT Platform
- IoT Based Raspberry Pi Home Security System With Email Alert

Flexible Batch Timings

Online Training

Duration	Weekday batch	Weekend Batch
1.5 Months	MON - THU	SAT & SUN

Classroom Training

Duration	Weekday batch	Weekend Batch
1.5 Months	MON - THU	SAT & SUN

Interested?

Get a Free Demo Session

Book Now

Thank You!

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