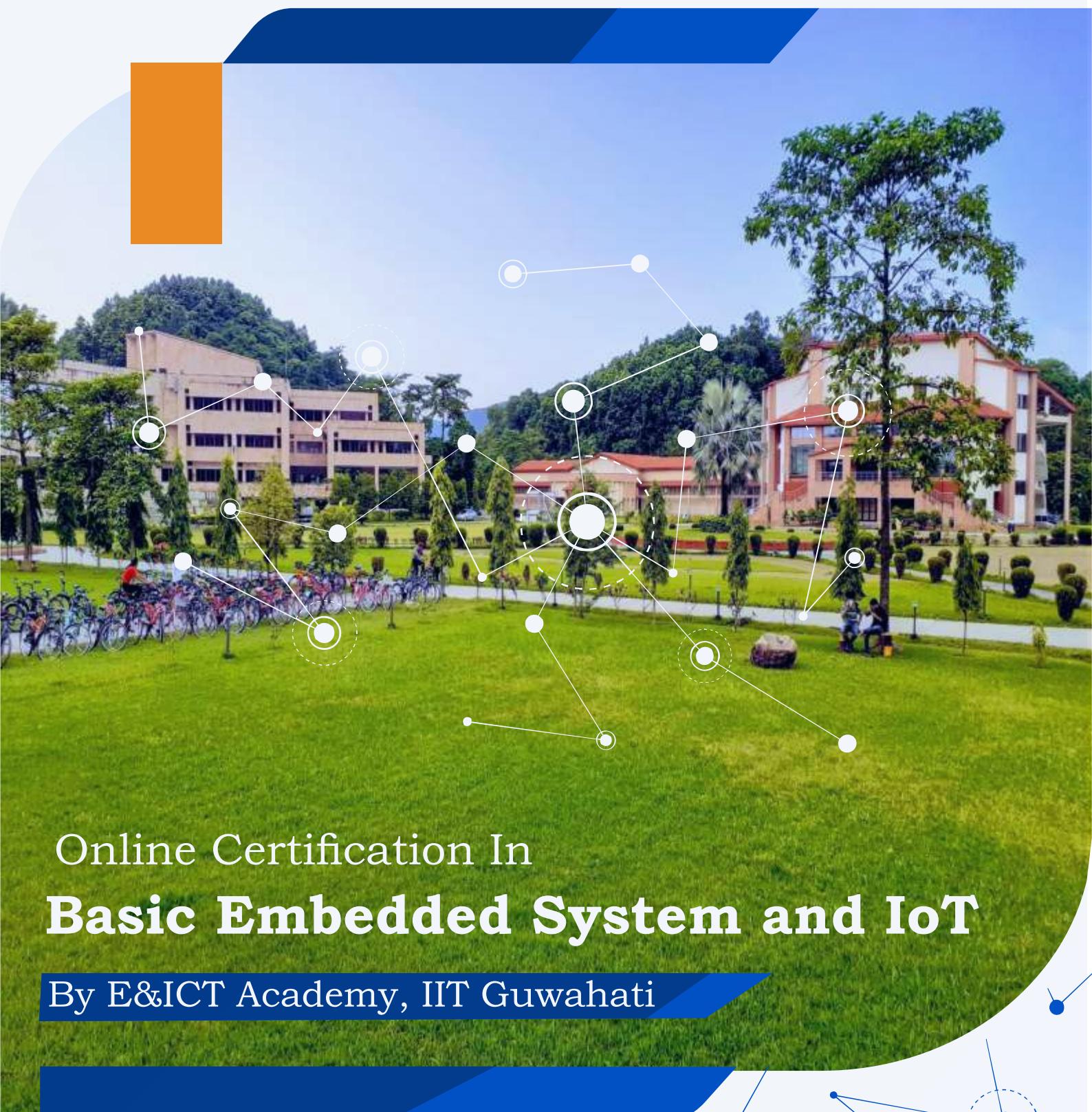


3 Months (80 Hrs)



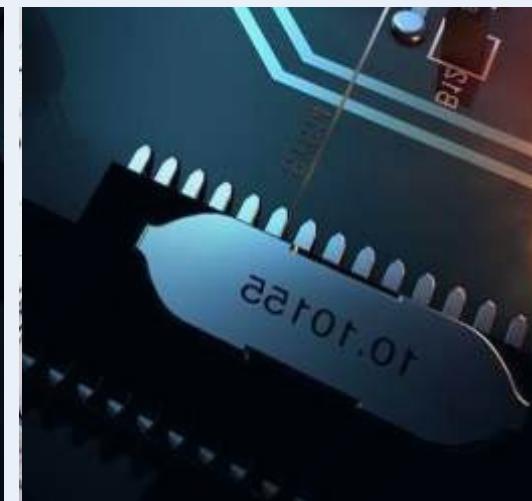
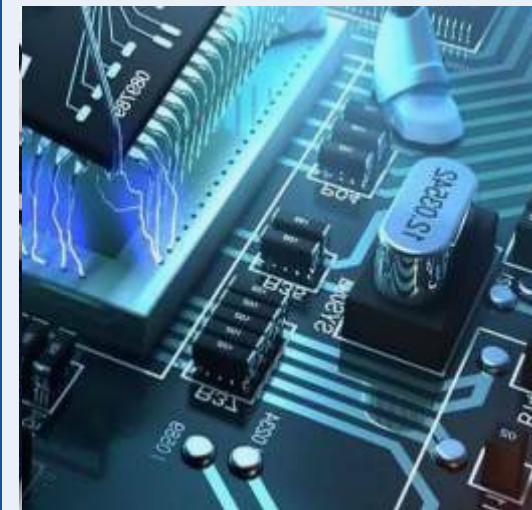
Online Certification In **Basic Embedded System and IoT**

By E&ICT Academy, IIT Guwahati

ABOUT THE PROGRAM

The Certification Program in **Basic Embedded Systems and IoT** has been designed with E&ICT Academy, IIT Guwahati and industry leaders to provide the best learning outcome. This 3-month extensive program will help you to learn to specify, design and program modern connected electronic systems based on commodity smartphones and sensor networks.

The transformative intersection between the Internet, mobile and sensor technology has inspired this course. Learn to create the next generation of IoT-enabling technologies, by designing an IoT system to connect embedded sensors using commodity smartphones via low power Bluetooth Low Energy. Skills such as IoT cloud and embedded system design are practiced.



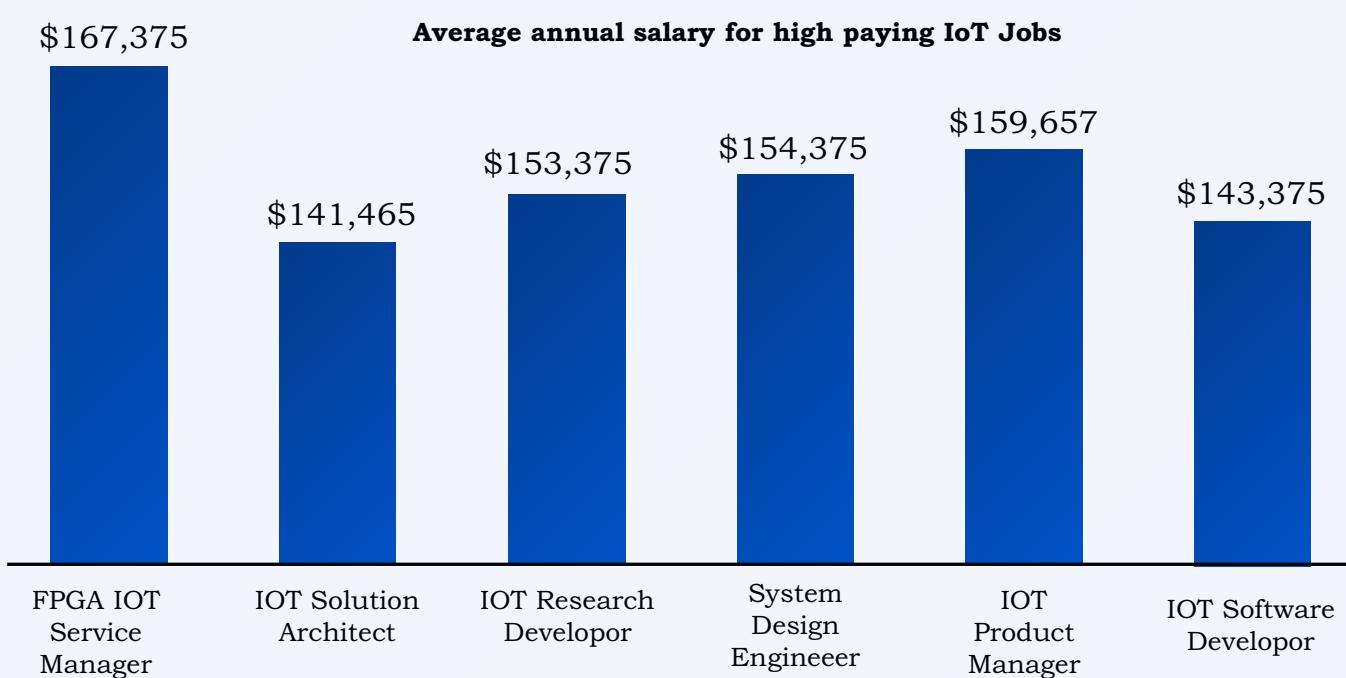
WHY IS EMBEDDED AND IOT IMPORTANT?

The IoT India Salary Study 2021 maintains that the salary of IoT professionals in India is nearly 76% higher than that of IT professionals. While IoT professionals get a median salary of Rs. 14.7 LPA, the median salary of IT professionals is around Rs. 8.65 LPA.



Google, PwC, Larsen and Toubro Ltd, Accenture, Cisco, PTC, ScienceSoft, and Tata Group of Companies are some of the prime recruiters of IoT talent.

PayScale categorizes the salary of IoT professionals based on their job roles



CURRENT TRENDS IN EMBEDDED-IOT JOB MARKET



Revenue for 2022 is expected to be \$321 billion worldwide

-Business Insider

BUSINESS INSIDER



By 2022, 50 billion IoT devices will be installed around the world.

-Gigabit

Gigabit



Companies could invest up to \$15 trillion in IoT by 2025

-McKinsey Digital

McKinsey Digital



Every second, 127 devices hook up to the internet for the first time.

-Ericsson

ERICSSON



ABOUT THE IIT GUWAHATI



Indian Institute of Technology Guwahati, the sixth member of the IIT fraternity, was established in 1994. The academic programme of IIT Guwahati commenced in 1995. At present the Institute has eleven departments and three inter-disciplinary academic centres covering all the major engineering, science and humanities disciplines, offering BTech, BDes, MA, MDes, MTech, MSc and PhD programmes. Within a short period of time, IIT Guwahati has been able to build up world class infrastructure and a reputation for itself.

ABOUT E&ICT ACADEMY, IIT GUWAHATI

Electronics and ICT Academy aims to provide specialized training to the faculties of Engineering, Arts, Commerce, Science colleges and Polytechnics institutes by developing short term training programmes on fundamental and advanced topics in IT, Electronics & Communication, Product Design, Manufacturing. In addition, the Academy conducts specialized customized training programmes and research promotion workshops for corporate sector & educational institutions.



ABOUT THE PARTNERSHIP

The Online Certification Program in **Basic Embedded Systems and IoT** is offered jointly by The IoT Academy and E&ICT Academy, IIT Guwahati to prepare the future workforce in Embedded Systems and IoT



Prof. Ratnajit Bhattacharjee

Principal Investigator

E&ICT Academy, IIT Guwahati

“

Ratnajit Bhattacharjee (Member, IEEE) received the B.E. degree (Hons.) in electronics and telecommunication engineering from NIT, Silchar, India, the M.Tech. degree in microwave engineering from IIT Kharagpur, India, and the Ph.D. degree in engineering from Jadavpur University, Kolkata, India. He has served as the Head for Electronics and Electrical Engineering Department, IIT Guwahati, Guwahati, India, from 2011 to 2014, where he is currently a Professor. He is also the Chief Investigator for MeitY sponsored project for setting up of an EICT academy, IIT Guwahati.



Kaushlendra Singh Sisodia

Director, UniConverge Technologies

“

Director at UniConverge Technologies Pvt Ltd working on (IoT, AI/ML, Industry4.0, 4G/5G). Partner with E&ICT Academy, IIT Kanpur for IoT skill development. Employed at Ericsson, Sweden for 6.5 Years and shifted to Bangalore to build and support HSPA team. Complete end to end knowledge of WCDMA 3G system.



PROGRAM HIGHLIGHTS

This 3-month program is uniquely designed by E&ICT Academy, IIT Guwahati and industry leaders to help you learn exactly what the job market demands.



**Hands-on program and
Industry-Grade Capstone
Projects**



**Industry-relevant skills
for new age Embedded
& IoT Systems**



**Designed by leading academic
and industry experts along
with IIT-Guwahati faculty**

PROGRAM BENEFITS



Practical Knowledge

Live instructor-led online classes by industry experts.



Curriculum

Curriculum designed by professors from IITG and industry experts.



Support and Guidance

Lifetime access to our Learning Management System and Program Support



Career Guidance and Placement Support

Complete access to a plethora of our Career Assistance and Placement Services



Personalised Attention

Dedicated technical and non-technical teams to resolve all your doubts



Doubt Clearing Sessions

24x7 subject matter expert support for your technical/non-technical doubts



Certificate/Credentials

Certificate of Completion from E&ICT Academy, Guwahati.



Immersive Learning Experience

A unique learning ecosystem to give you an offline-like immersive experience

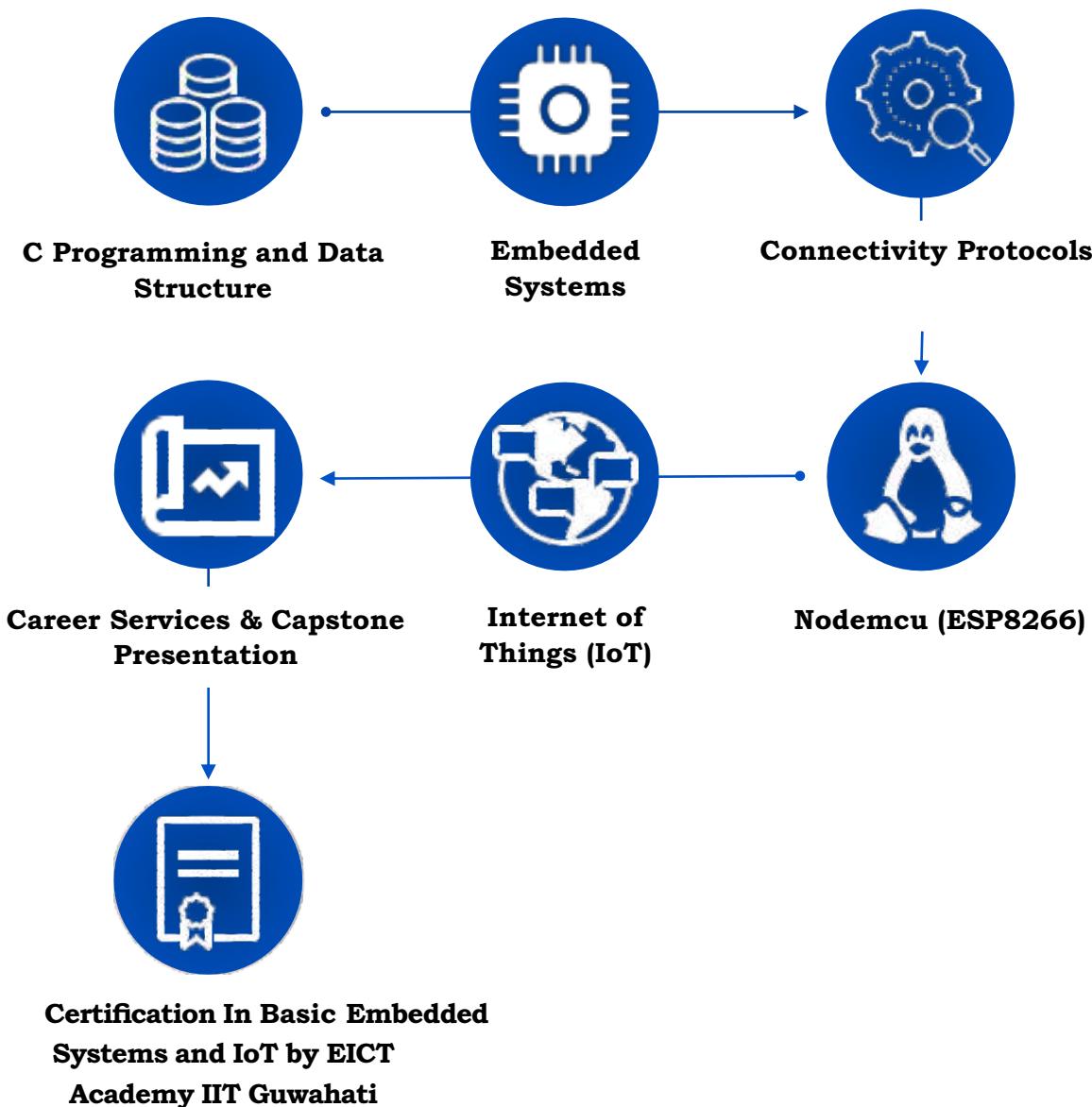
PROGRAM PEDAGOGY

Learn from one of the best faculty in India through live online sessions. While Academic Professors will help you learn Embedded & IoT concepts, industry experts will impart practical knowledge of Embedded System, IoT & Network Layered architecture through real world projects.



TOOLS, LANGUAGES & FRAMEWORKS

LEARNING PATH



PROGRAM CURRICULUM: LEARNING PATH

Master **Industry-relevant skills for Basic Embedded System & IoT** through the most relevant curriculum designed by E&ICT Academy, IIT Guwahati and leaders from the industry.

C Programming and Data Structure

Module

01

C Basics, Control Statements, Loops, Memory Allocation, Functions, Arrays, Strings, Pointers, Structure and union, Linked-List, Tree, Graph.

Basic Embedded Systems

Module

02

Processor Architectures, Types of Microcontrollers, 8-bit/16-bit/32-bit Microcontrollers

NODEMCU(Esp8266)

Module

03

Install IDE Software, Programming of Nodemcu, Pinout of Nodemcu, Traffic Light Controller

Connectivity protocols (wired and wireless) and Sensors/Actuator

Module

04

UART/USART, SPI, I2C, Wifi, BLE, USB, ADC,Ultra Sonic Sensor, Smoke Sensor, Gyroscope Sensor

IOT Protocols

Module

05

HTTP/REST, MQTT, COAP

IOT cloud services

Module

06

IoT Cloud Architecture, SAAS, PAAS, IAAS, Thingspeak cloud, Google Firebase

Network Layered Architecture Communication

Module

07

OSI model, TCP/IP model, Ipv4 and Ipv6, Wireless sensor networks

CAPSTONE & LIVE SESSION PROJECTS

The projects and assignments will help you accumulate real-world experience in different industries.



Automotive Industry



Education Industry



Telecommunication



Entertainment Industry



Healthcare Industry



Manufacturing Segment



Smart Grid



Production industry



Robotics



CAPSTONE PROJECTS

Industry projects will be a part of your Certification Program in **Basic Embedded System and IoT** to consolidate your learning. Industry projects will ensure you have the real-world experience to start your career in Embedded & IoT.

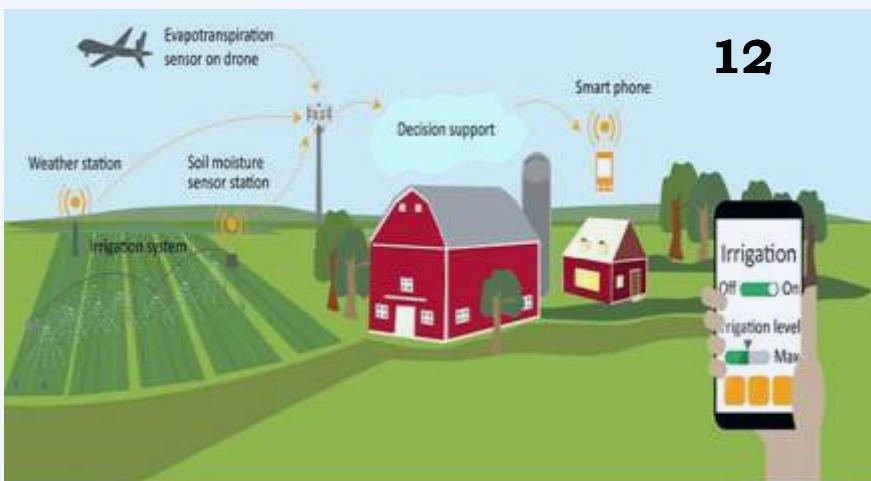
- 10+ Essential Tools
- Designed by Industry Experts
- Get Real-world Experience

IOT BASED SMART IRRIGATION SYSTEM

Water management is paramount in countries with water scarcity. This also affects agriculture, as a large amount of water is dedicated to that use. The lack of fresh water is a rising concern, particularly in the Mediterranean countries or southern Asian countries such as India. We determine the parameters that are monitored in irrigation systems regarding water quantity and quality, soil characteristics and weather conditions. We provide an overview of the most utilized nodes and wireless technologies.

Hardware Tools you will be using: Nodemcu, Soil moisture Sensor relay module , DHT11 Sensor

12



SMART HOME USING GOOGLE FIREBASE

A smart home system is the system that connects with your home appliances to control any specific task by remotely. We can use smarthome system to programme our sprinklers, set and monitor our home security system and cameras, and can control home appliances like our refrigerators, air-conditioning and heating.

Hardware Tools you will be using: Nodemcu, Relay Module



IoT BASED FALL DETECTION SYSTEM

Emergencies can happen suddenly and without warning. That is why fall detection technology is an invaluable, life-saving feature in medical alert systems. If you can't press the help button after a fall or during a medical emergency, the automatic fall detection feature of a medical alert system can give you the peace of mind that you will still receive the help that you need. These systems automatically activate the sensors if the user suffers a fall.

Hardware Tools you will be using:

Nodemcu,MPU6050 sensor

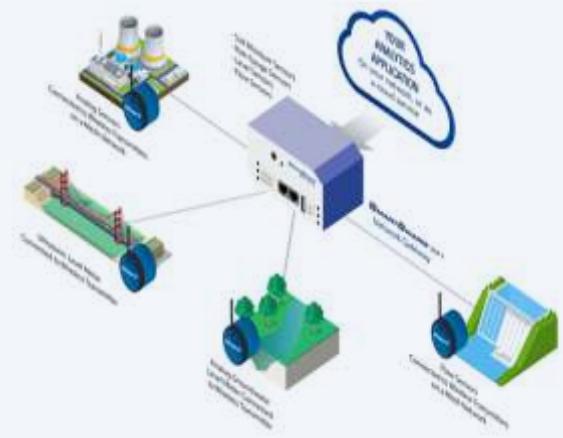
Smart Fall Detection



IOT BASED FLOOD MONITORING SYSTEM

As we all know flood is one of the major natural disasters, causes a huge amount of loss to the environment and living beings. It causes when water level in dams, river etc suddenly rises. So, in these conditions, it is most crucial to get the emergency alerts of water level status at river beds and

Hardware Tools you will be using: Nodemcu,Ultrasonic Sensor



IOT BASED SMART PARKING SYSTEM

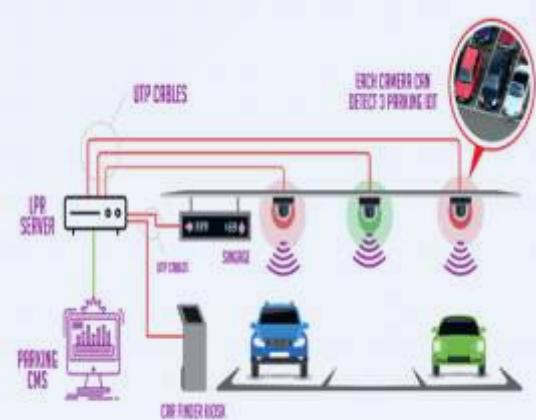
Vehicle parking is a major issue in modern congested cities of today. There simply are too many vehicles on the road and not enough parking space. This has led to the need for efficient parking

Hardware Tools you will be using: Nodemcu,Ultrasonic Sensor

IOT BASED TEMPERATURE AND HUMIDITY MONITORING SYSTEM

Many people are conscious about the environment they are living in. In order to help those people a smart environment monitoring system is needed. A smart Internet of Things (IoT) based temperature and humidity real time monitoring and reporting system is an effective system to monitor it. The proposed system is an advanced solution for monitoring and live reporting the temperature and humidity at different points in specific locations.

Hardware Tools you will be using:
Nodemcu,DHT11



Mobile Air Quality Monitoring with IoT



IOT BASED AIR QUALITY MONITORING & ALERT SYSTEM

Air pollution is a mixture of solid particles and gases in the air. Car emissions, chemicals from factories, dust, pollen and mould spores may be suspended as particles. It is a major environmental problem and causes serious damage to human health. The importance of smart monitoring and controlling pollution emissions becomes more relevant and

Hardware Tools you will be using:
Nodemcu ,Mq135 Sensor



IOT BASED WEATHER STATION

A weather station can be described as an instrument or device, which provides us with the information of the weather in our neighbouring environment. It can provide us with details of our surroundings temperature, barometric pressure, humidity, etc. An IoT based weather reporting system is such type of a system that forecast the report about all climatic conditions.

Hardware Tools you will be using:

Nodemcu,DHT11,MQ135 Sensor,OLED Display

IOT BASED WAREHOUSE MANAGEMENT SYSTEM

The rise of sales in e-commerce is good news when it comes to revenue reports and a challenge for warehouse managers — as retailers scale and expand, keeping track of large volumes of inventory becomes a demanding task. To meet the needs of an on-demand shopper, warehouses turn to IoT applications. The warehouse is the right platform for launching Internet of Things projects and validating the opportunities of the technology. That's why there's a wide range of IoT applications and use cases.

Hardware Tools you will be using:

Nodemcu,DHT11,MQ135



PREDICTIVE ANALYSIS USING EDGE IMPULSE

Every business uses data to drive their business decisions. So, why the need for predictive analytics if you are already using data? Comparing data with and without predictive analytics is like comparing a domestic cat to a Bengal Tiger—there is a vast difference. Predictive analysis empowers organizations in any industry to make decisions for the future by transforming uncertainty into meaningful and actionable insights.

Hardware Tools you will be using: Nodemcu,MPU6050 Sensor



CAREER ASSISTANCE SERVICES



Live Career-Oriented Webinars

Live webinar sessions that include curriculum and career services walkthrough to help learners understand their learning objective and expectations of hiring managers.



Leadership Skill Development Sessions

Recurring training sessions with experts to help learners develop Interpersonal & Leadership Skills.



1-on-1 Career Mentoring Sessions

One-on-one Career Mentoring sessions on how to develop the right skills and attitude to secure a dream job.



Exhaustive Interview Preparation

Expert tips, sample interview questions, mock interviews with constructive feedback from industry experts to gain hands-on experience of technical rounds, HR round, and more.



Job Search Assistance & Job Feeds

Access to multiple job portals to help learners navigate through thousands of jobs including global remote jobs.



Profile Building Assistance

A dedicated Career Coach will provide expert tips on how to create an attractive, relevant resume and LinkedIn profile.



TOP RECRUITERS



OUR ALUMNI WORK AT



WHAT'S IN IT FOR YOU

After completing the program, you will receive a Online Certification Program in **Basic Embedded Systems and IoT**

which will be awarded jointly by E&ICT Academy, IIT Guwahati. Candidates will be able to explore a wide range of A jobs available globally, like:

Entry-Level:

- Embedded Software Engineer
- IoT Embedded Developer
- IoT Architect



Mid Level:

- Embedded Firmware Developer
- IoT FirmwareEngineer
- System Engineer



Senior Level:

- Senior Embedded Firmware Developer
- Senior IoT Engineer
- Senior Software Engineer



PROGRAM FACULTY, INDUSTRY EXPERTS

The best of academics and industry experts to give you a robust learning experience. We aim to give you a complete exposure to real-time and relevant industry applications of the concepts learnt.



**Prof. Ratnajit
Bhattacharjee**

Principal Investigator

Electronics & ICT Academy, IIT Guwahati

[Profile](#)



Prof. Gaurav Trivedi

Co-Principal Investigator

Electronics & ICT Academy, IIT Guwahati

[Profile](#)



Prof. Sumit Kalra

Department of CSE

Indian Institute of Technology Jodhpur

[Profile](#)



Mr. Kaushlendra Sisodia

Industry Expert/Program Advisor

Director at Uniconverge Technologies, IIT Kanpur Alumnus

[Profile](#)



Dr. Ashwani Singh

Industry Expert

Design Engineering Manager at Schneider Electric, Paris

[Profile](#)



Mr. Jitesh Kumar

Embedded Systems and IoT

Senior IoT Engineer and Trainer, The IoT Academy

[Profile](#)



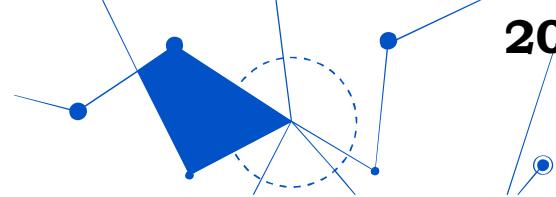
Mr. Rishabh Kumar

Embedded Systems Engineer

Senior IoT Engineer and Trainer, The IoT Academy

[Profile](#)

PROGRAM INFLUENCER



The best of academics and industry experts to give you a robust learning experience. We aim to give you a complete exposure to real-time and relevant industry applications of the concepts learnt.



Mr. Vivek Kumar

20+ Yrs Exp, Entrepreneur, Investor, Co-founder at WeltGlobal AB, Sweden and Rediflex AB, Sweden, IIT-Kanpur Alumnus



Dr. Ashwani Singh

18+ Yrs Exp, Schneider, Ph.D. France Engineering, Innovation Management , IIoT, Industry 4.0



Mr. Rajiv Bajpai

20+ Yrs Exp, Apple (USA), ex-Broadcom, ex-Samsung, IIT-Kanpur Alumnus



Mr. Manbhawan Prasad

20+ Yrs Exp, Product Manager at Microsoft, Ireland EMCC Certified Coach, IIT-Guwahati



Mr. Anil Pandey

20+ Yrs Exp, Director of R&D - Protocol Stack Development at Rohde & Schwarz MTC, UK, IIT-Kanpur Alumnus



Mr. Ashish Shrivastava

16+ Yrs Exp, Senior System Designer, Algorithm and System, LTE/5G Baseband at Ericsson, Sweden



Mr. Tej Pratap Pandey

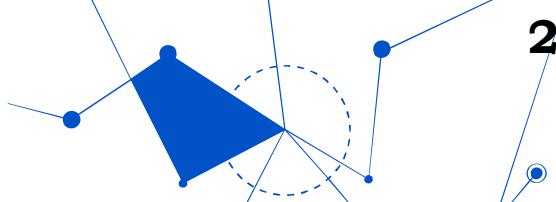
20+ Yrs Exp, COO at Mobiots, IIT-Kanpur Alumnus



Mr. Deepak Singhal

20+ Yrs Exp, Enterprise Architect Director at Capgemini, Speaker on Cloud technologies

SUCCESS STORIES



The best of academics and industry experts to give you a robust learning experience. We aim to give you a complete exposure to real-time and relevant industry applications of the concepts learnt.



Sunita Devi Arya
Placed at



Obtaining information from these industry insiders allows you to decipher the game's hidden codes, which will ensure your victory. The IoT Academy exceeded my expectations and assisted me in obtaining my dream job at IKEA.



Ravi Teja
Placed at



Every part of the training was well-organized and provided just what I required. The professors were excellent, the mentors were helpful, and the course was well-designed to meet all of the student's needs.



Srividhya HK
Placed at



The IoT Academy assisted me in correctly channelling my energy, revising what I had learnt in college, and learning new things! Also, the industry training, which assisted me in getting a job at a reputed company.



G Shravan Kumar Reddy
Placed at



I wanted to improve my knowledge of AI and Machine Learning so that I could keep up with the newest trends and technology. IoT Academy is the name I've chosen for myself. The IoT Academy support staff and mentors were great help. "Highly recommended for people interested in learning about AI and Machine Learning."

CERTIFICATIONS

Upon successfully completing this program, you'll earn **Online Certification in Basic Embedded Systems and IoT** that is co-branded by **E&ICT Academy, IIT Guwahati** as the Knowledge Partner.

This certificate will testify to your skills as an expert in **Embedded Systems and IoT**

Sample Certificate



Certification ID: 123AB67



Electronics & ICT Academy
Supported by Ministry of Electronics and Information Technology (MeitY), Govt. of India
Indian Institute of Technology, Guwahati

Certificate of Completion

This is to certify that Mr./Ms.

XXXXXX

has successfully completed the online

Basic Embedded System and IoT

organized by Electronics & ICT Academy Indian Institute of Technology, Guwahati
held from XXXXXX to XXXXXX

This is an online certification programme conducted jointly by E&ICT Academy, IIT Guwahati and The IoT Academy towards upskilling.

Prof Gaurav Trivedi
Principal Investigator
E&ICT Academy, IIT Guwahati

Kaushlendra Sisodia
Director
Unicoverge Technologies

PROGRAM ELIGIBILITY CRITERIA

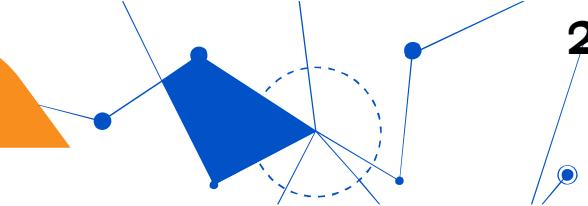
Those wishing to enrol in the Online Certification Program in Basic Embedded Systems and IoT By EICT Academy IIT Guwahati will be required to apply for admission

For admission to the Online Certification Program in Basic Embedded Systems and IoT, candidates should have:

- Any Undergraduate Degree holder like BCA, B.Tech, B.E, B.Com etc with an average of 50% or higher marks.
- Basic understanding of programming concepts and Data Structure. For candidates who do not know C Language, we offer a free Self-Paced Tutorials.
- Working Professionals with 1+ years of experience are preferred to apply for this program.
- Fresher can also Apply.



APPLICATION PROCESS



The application process consists of four simple steps. An offer of admission will be made to the selected candidates and accepted by the candidates upon payment of the admission fee.

1



Online Application Form

Apply by filling a simple online application form. You will be required to provide personal, educational, and professional details. Once we receive your details, our Admission Head will reach out to take your candidature further.

2



Interview Process

Go through a screening call with the Admission Director's office who will gauge your passion and eligibility for the program.

3



Scholarship & Offer Letter

Apply for the scholarship (not mandatory) and take the test. An offer letter will be rolled out to the selected candidates.

4



Admission & Batch Allotment

Complete the admission and make a quick block payment formality with assistance from our loan partners, you will be given course credentials and your learning journey will begin!

CONTACT DETAILS



Program Information:

**Online Certification In Basic Embedded System
and IoT**

By E&ICT Academy, IIT Guwahati



eict.iitg.ac.in

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theiotacademy.co

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