IIT Guwahati

The IoT Academy
Connecting The Unconnected

3 Months (80 Hrs)

CAPSTONE PROJECTS

Online Certification In

Basic Embedded System and IoT

By E&ICT Academy, IIT Guwahati

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.

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

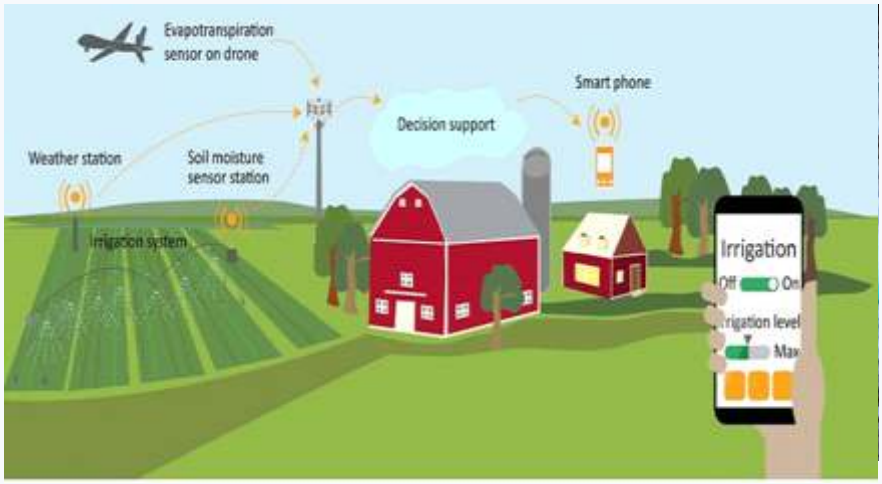
Industry projects will be a part of your Certification Program in **Basic Embedded System and IoT** to consolidate your learning. Industry projects will ensure you have the real-world experience to start your career in Embedded & IoT.

- 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



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

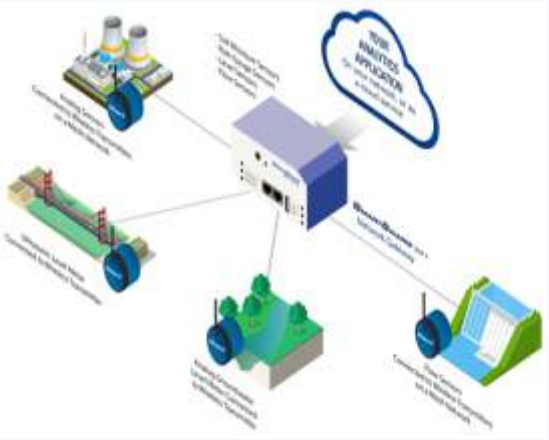
Emergencies can happen suddenly and without warning. That is why fall detection technology is an invaluable, life-saving feature in medical alert systems. If you can't press the help button after a fall or during a medical emergency, the automatic fall detection feature of a medical alert system can 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.

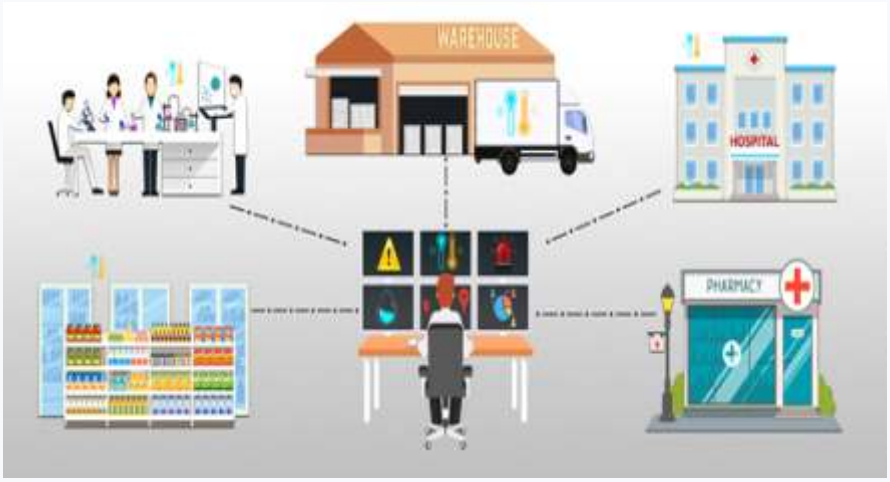
Hardware Tools you will be using: Nodemcu,MPU6050 sensor

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 TEMPERATURE AND HUMIDITY MONITORING SYSTEM

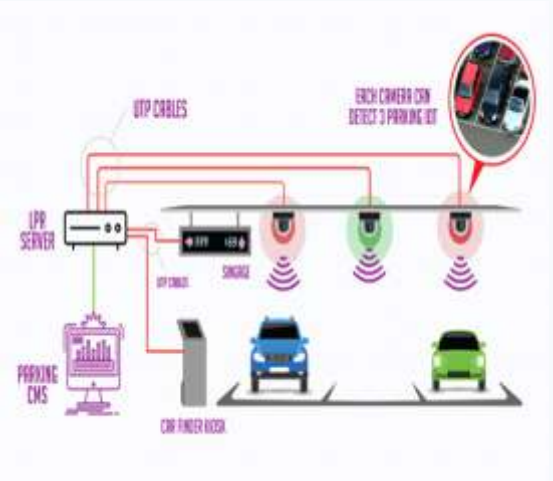
Many people are conscious about the environment they are living in. In order to help those people a smart environment monitoring system is needed. A smart Internet of Things (IoT) based temperature and humidity real time monitoring and reporting system is an effective system to monitor it. The proposed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

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 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

CONTACT DETAILS

Program Information:

Online Certification In Basic Embedded System and IoT

By E&ICT Academy, IIT Guwahati

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