



COURSE OUTLINE

 **Tech Bairn** 
Let's accelerate the future

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Internet of Things

The “**Internet of things**” (IoT) is becoming an increasingly growing topic of conversation both in the workplace and outside of it. It’s a concept that not only has the potential to impact how we live but also how we work. But what exactly is the “Internet of things” and what impact is it going to have on you, if any? There are a lot of complexities around the “Internet of things” but I want to stick to the basics. Lots of technical and policy-related conversations are being had but many people are still just trying to grasp the foundation of what the heck these conversations are about.

The training will be conducted using **ESP8266 Wifi Module** and **Arduino Platform/NodeMCU**.

COURSE CONTENTS

- Introduction to Internet of Things
- Scope & Job Market of IoT
- Applications of IoT in Industry, Home & Smart Cities
- IoT Security

- Requirements for designing IoT Devices & Services
- Introduction to a Programmable System
- Introduction to Arduino/ARM
- Arduino Uno Specifications & Pin Layout
- Arduino Programming Fundamentals
- Interfacing LED with Arduino/ARM

- Proximity Sensor & it’s working
- Interfacing Proximity Sensor with Arduino/ARM
- Analysing Sensor data on Serial Monitor and Serial Plotter
- Interfacing Temperature Sensor with Arduino/ARM
- Interfacing Humidity Sensor with Arduino/ARM

- Working with Serial Communication
- LED Controlling using Serial Communication
- Interfacing relay with Arduino/ARM
- Designing Home Automation system using PC
- Interfacing Bluetooth with Arduino/ARM
- Controlling Home Appliances using Android Phone
- Designing Android App for Controlling Home Appliances

- Voice Controlled Home Automation System using Bluetooth & Google Voice Recognition System
 - Interfacing Electrical Motor with Arduino/ARM
 - Automatic Door Controlling using Proximity Sensor
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- Working with ESP8266 Wi-Fi Module
 - Testing AT Commands
 - Connecting ESP8266 to Access Point
 - Creating Local webserver using ESP8266
 - Designing UI for IoT Dashboard and using Arduino/ARM as a Server
 - Controlling Devices from Local server Dashboard
 - Getting Started with ThingSpeak
 - Creating an account
 - Uploading data to cloud and reading data on Smartphone and PC
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- Introduction to Node-red and node.js
 - Installing node-red
 - Installing ThingSpeak node and IBM Watson node
 - Twitting Sensor data on Twitter
 - Uploading Sensor data on ThingSpeak using node-red
 - Uploading data to IBM Watson demo Platform using node-red
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- MQTT protocol
 - Publisher, Subscriber
 - User Cases
 - AWS IoT Process & Architecture

ELIGIBILITY

- Students of 2nd year, 3rd year and final year Electronics, Biomedical, Electronics and Telecommunication, Electronics and Electrical Engineering, Electrical Engineering, Computer Science Engineering, Pure Science undergraduates of Computer Science & Electronics and Diploma.

COURSE OUTCOMES

- Participants will be introduced to the Internet of Technology and its Application.
- The training includes hands-on labs resulting in exploration of concepts.
- Upon successful completion of course, participants will get a Karkhana completion certificate.

About Us

We are on a mission to build a better future both for the students and their beloved country.

Our Story

“Techie Bairns” was born out of the desire to reach out to students who couldn’t decide what to do next as a fresher. We have been endorsing in technologies in Bhubaneswar since Our understanding with the students and nurturing their talent, backed with expertise is what makes us a vibrant team.

What’s with the name “Techie Bairns”

The word “Techie” is quite popular among everyone in and around us. “Bairn” whose colloquial translation is “kid”. We wanted it something to be a one which is catchy and hence here it is “TECHIE BAIRNS”.

Services offered by Techie Bairns

Techie bairns provide a number of programs for the students which helps them in enhancing their technical skills.

- **Training** : We provide training for the students on various courses, which are need of the hour. During this training the students will be able to learn and interact with our expert instructor, who will be there to explain topics in a great detail and at the same time help with your problems and at the same time provide personalized study as you progress through the course.
- **Workshop** : Techie Bairns organises certain workshops for the students in order for them to increase their understanding level. Theoretical knowledge is not always enough so it would be better if the students get hands on experience with the course they are pursuing.
- **Project help** : Apart from all these we also provide help in creating projects for the students.
- Research and Development