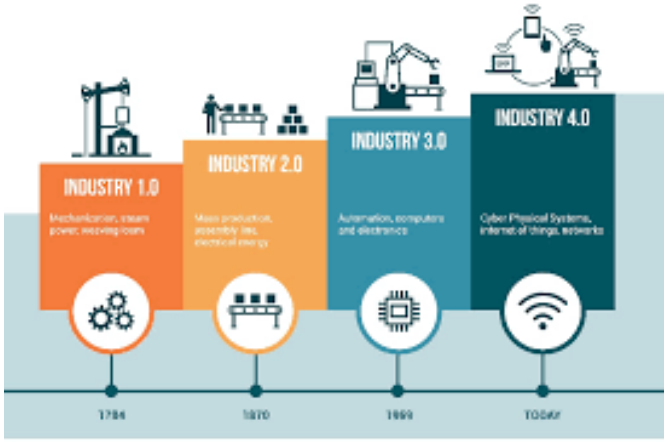
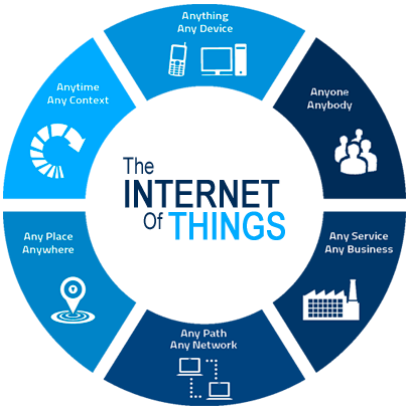
On Campus Industrial Internship for UG & PG Students

Four weeks Internship on Industry4.0 /IoT

For EIE, ECE, EEE, CS, IS Students





Features of the Training Program:

- Fundamental concepts in the area of industrial automation are covered.
- Lecture sessions from Industrial faculty and experts from other academic institutions are supported by demonstrations and applications videos.
- Hands on training on advanced trainer systems like Drives, PLC,SCADA,Sensors,IoT ,Machine Learning and Artificial Intelligence.
- The course module is designed in consultation with Industrial Experts to suit the current Industrial trends.
- A course completion certificate will be awarded.
- Mid-Course and final tests conducted to ensure the learning of the course objectives.

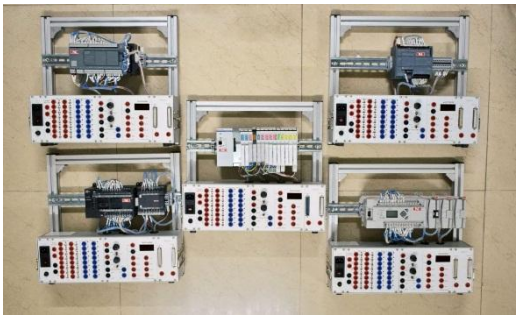
Industry4.0 / IoT Internship for UG and PG Students

Target: BE/B-Tech with stream in:

- Electronics & Communication Engineering
- Electronics & Instrumentation Engineering
- Electrical & Electronics Engineering
- Computer Science Engineering
- Information Science Engineering

Sl.No	Topic	Duration
1.	Industrial Automation	1 week
2.	Android Development	1 week
3.	Industry 4.0 & IoT Sensors	1 week
4.	Mini Project Description and Execution	1 week
5.	Report Preparation	1 Week

Industrial Automation :



- Overview of Automation Systems
- Basic Concepts of PLC
- Working Of PLC and General Application
- Hardware Details of PLC
- Related Software for PLC
- Indraworks software features explanation in details
- Project Development in PLC software
- Network Settings
- PLC Configuration
- Addressing the Variables
- Declaring variable names
- Adding & Declaring Timer
- Adding & Declaring Counters
- Adding NO/NC contacts
- Adding Timers and Counters
- Procedure to RUN the program on PLC kit
- PLC Programming
- Error messages encountered during programming and its solutions.
- ASSESSMENT TEST on PLC.

Android Development

Course Contents:

1. Introduction
    - Introduction to Android OS
    - Android Studio
    - Introduction to JAVA, the programming language for Android Studio
    - Basic Language constructs
    - Exception Handing
    - Object Oriented Programming (OOPs) Concepts
        a. Abstraction
        b. Encapsulation
        c. Polymorphism
        d. Inheritance
        e. Association
        f. Aggregation
        g. Composition

2. Overview of Android Architecture
    - Android Software Stack
    - Linux Kernel
    - Android Run time – ART
    - Android Libraries
    - Application Framework

3. Anatomy of android application
    - Android Activities
    - Intents
    - Broadcast Intents
    - Broadcast Receivers
    - Android Services
    - Content providers
    - Application manifest
    - Application resources

4. Working on Android Studio-Developing Basic Applications.

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IoT /Industry 4.0

(Estimote Beacons and Bosch XDK overview)

Course Contents:

1. Getting started
    - Intended Use
    - Hardware Overview
    - Software installation
2. Functional description
    - Block diagram
    - Power Management
3. Types of sensors
4. Radios
    - WLAN
    - Low Energy Bluetooth
5. Software Overview – The IoT Workbench
    - Power Consumption and Energy Management'
    - IoT Workbench
    - IoT Workbench – Workspace(IoT View)
6. Operating IoT Sensors
    - USB Port
    - Operating Modes
7. Firmware Over the Air (FOTA)
    - Introduction
    - FOTA Container
    - FOTA Container Creation
    - FOTA Update Process
8. Interfaces
    - Extension Interface
    - Connection External Components to IoT Sensor
9. Software Examples
10. Simple Android application development for Bosch L25 PLC
11. Hands on session-Mini Projects.