This is an exhaustive hands on training program on Robotics designed to meet the industry needs and provide students with placements. This course would provide the participants knowledge and experience on the fast growing field of Robotics.

The program is a specific program to develop applications that we see and use in daily life , for eg. a playing a racing game on a mobile phone. This program will give students a detailed hands-on experience .

## Course Content

### Topics to be covered in two days

Gesture Controlled Robotics – Basics and why is it different?

- What is already in place?
- Types of Robot Sensors
- Application of Gesture Controlled robotics
- What can you do in the future ?

Understanding the Sensing System:

- Accelerometers Basics
- Working
- Interfacing
- Applications

Microcontrollers

- uC and its Architecture
- I/O Functions
- Programming a uC

Actuators

- Motor Control
- Different Types of Actuators
- H- Bridge Concept

Fabrication of a the kit provided

- Assembling the kit
- Understanding the Kit and the Functions
- Software Installation
- Writing Codes

The Practical Activities include :

- LED Blink
- Computer Controlled Robot
- Obstacle Detector Robot
- Orientation Sensing Robot
- Gesture Controlled Robot

## Kit Content:

- One Multipurpose Development Board (Atmega Based) [1Pc]
    - 4 channels of motor control( L293NE ), capable of driving 2 dc motors or 1 stepper motor at a time
    - 6 digital input channels for sensor interfacing
    - ADC – with 6 inputs for Transducer interfacing
    - Onboard Port Connector for In System Programming
    - USB Connectivity for PC /Laptop Interfacing
- IR Sensors [ 2 Pc ]
- Two Geared Motor [2 Pc]

- Robotic Chassis Set [1 Pc]
- One USB Cable [1Pc]
- Sensor Connectors and Cables [ 4 Pc]
- Battery Snaps [ 2 Pc]
- Two Wheels with Grip [ 2 Pc]
- One Castor Wheels [ 2 Pc]
- One Pack of Nut and Bolts [ 1 Pack]
- One Screw Driver [1Pc]
- All Software and Study Material [1Pc]
- One Atmega IC [1Pc]
- One Motor Driver IC [1Pc]
- Accelerometer