



Industry Oriented Certified Training Program on Embedded System & Robotics




This is a Training which is best suited to beginners who are taking their first step towards robotics. This Training basically deals with designing various kinds of electronic sensors and circuits and their use in making autonomous robots by using a microcontroller. After the Training students come up with a Wired Robot, Wireless Robot, Line tracking robot, Sound operated robot, Computer Controlled Robots and many more....

Course Certification: Certified by Nutan Infotronics Pvt. Ltd.





Course Duration: 45 Hr

Pre-Requisites: Basic Knowledge of C Programming




Introduction to Embedded Systems

-  What is Embedded System
-  Necessity of Embedded System in Today's world
-  PCB Designing






Introduction to AVR Microcontroller and Basic Features

-  Why Microcontrollers
-  Microcontroller Architecture
-  Pin out of Microcontroller
-  I/O Registers




Programming Microcontroller

-  Compiler and Developer
-  Project Setup
-  Burning Microcontroller IC






Interfacing of simple I/O Devices

-  LED Interfacing
-  LCD Interfacing
-  Keypad Interfacing
-  Relay Interfacing
-  Switches






Google Sketchup

-  Introduction to google sketchup
-  Design of Robotic ARM
-  Torque Calculation




Sensors

-  TSOP1738 (Light Sensor)
-  IR-Photodiode (Light Sensor)
-  Light Dependent Resistor (Light Sensor)
-  Accelerometer (Motion Sensor)
-  Flex Sensor





Universal Synchronous and Asynchronous Receiver & Transmitter (USART)

-  Introduction to USART
-  Synchronous and Asynchronous Serial Communication
-  USART Registers
-  Programming USART
-  Rx/Tx Pair Wired and Wireless Communication






Wireless Modules

-  ZigBee (XBee) Wireless Communication
-  Global System for Mobile (GSM) Module
-  Radio Frequency Identification (RFID) Module








Motors Interfacing

-  DC Gear Motor Interfacing
-  Driving DC Gear Motor according to Application
-  Servo Motor Interfacing
-  Driving Servo Motor according to Application

Timers/Counters and Pulse width Modulation (PWM)

-  Introduction to PWM by using Timers/Counters
-  Different Wave Generation Modes of Timers/Counters
-  PWM Generating Strategy
-  Displaying PWM on LED
-  Manipulating Speed of DC Gear Motor by PWM

Projects Covered

-  Location Finder using GPS Receiver
-  Password based authentication system
-  Home Automation systems
-  Mobile making
-  Automated attendance Systems with RFID
-  GSM interfacing.
-  Visitor counter.



Accelerometer interfacing

RFID based attendance systems

Cell phone Controlled SMART HOME

Accelerometer based movement control.

Touch screen controlled robot

Quiz & competition

Prize & Certificate Distribution

The Training program has following highlights

- ❖ Training program introduces the students to concepts of robotics.
- ❖ As the training program focuses on practical and project work it manifests the concepts from the regular College curriculum in better and simpler way than the regular College sessions.
- ❖ The students are trained by the industry experts having hundreds of hours of training experience under their belt.
- ❖ The course is designed in such a way that we provide personal attention to every student and look up to the student as future Einstein.

What students get

- ❖ Practical and hands-on technical knowledge of Robotics.
- ❖ Familiarity with the various electronic components and other devices used in robotics.
- ❖ Application of the knowledge to solve the problem. (Troubleshooting)
- ❖ Application of the knowledge and skills to implement an idea to work. (Applied Science)
- ❖ Inspired to innovate.
- ❖ Challenged to give best. (Project competition)
- ❖ Foundation for the advanced learning.