



Course Content of Android Robotics Workshop

Session 1: Introduction

- ❖ *Introduction to Robotics*
- ❖ *Robotics and its application*
- ❖ *Definition, of the Robots*
- ❖ *Future of Robotics*
- ❖ *Basic Parts for build a robot*
- ❖ *Mechanical Structure*
- ❖ *Power Supply*
- ❖ *Motors*
- ❖ *DC Motors: Construction & Characteristics*

Session 2: Motor Driver Using H-Bridge

- ❖ *DC Motor Drivers*
- ❖ *H-Bridge Motor Driver*
- ❖ *Working of H-bridge & Concept*
- ❖ *L293D Motor driver IC*
- ❖ *Internal Circuit of IC*
- ❖ *Hands on Session for H-Bridge interfacing*

Session 3: Introduction to microcontroller

- ❖ *What is microcontroller?*
- ❖ *Difference Between microcontroller & microprocessor?*
- ❖ *Introduction to Atmega 8 /16 microcontroller*
- ❖ *Architecture of the AVR Microcontroller*
- ❖ *RISC v/s CISC*
- ❖ *How can we use an own microcontroller in our own circuit?*
- ❖ *Pin description of the microcontroller*
- ❖ *How to use I/O of the microcontroller*



Session 4: Introduction to Bluetooth

- ❖ *Introduction to Bluetooth*
- ❖ *Working principle of the Bluetooth*
- ❖ *Interfacing of Bluetooth TTL module with the microcontroller*
- ❖ *Writing Embedded 'c' program for Serial Communication*

Session 5: Introduction to Embedded C Programming

- ❖ *Embedded C Programming for the Microcontroller*
- ❖ *Introduction to AVR Studio and Win AVR*
- ❖ *Introduction to C , Flow Control and function*
- ❖ *Program structure and debugging*
- ❖ *How to program a microcontroller*

Session 6: Introduction to Android

- ❖ *Introduction*
- ❖ *Mobile Platforms*
- ❖ *Android Platform*
- ❖ *Android Application Project Structure*
- ❖ *Eclipse IDE*
- ❖ *Android Emulator*

Session 7: Android Tools & Component

- ❖ *Emulator: Design, Debug and Test applications*
- ❖ *Dalvik Debug Monitor Service (DDMS)*
- ❖ *Android Debug Bridge (ADB)*
- ❖ *Android Development Tools (ADT) Plug-in*
- ❖ *Android Virtual Devices (AVD)*
- ❖ *DX: Generate Android byte code from .class files*
- ❖ *Intent*