Brainwave Controlled Robotics

OBJECTIVE: Brain Controlled Robotics

SESSION I:

1. Introduction to Robotics

- Introduction
- History
- Issac's Laws of Robotics
- Robotics & Embedded System
- Latest Trends in robotics

2. Basic of Electronics

- Resistors
- Capacitors
- Transistors
- Diodes

3. Introduction to Microcontroller

- What is Microcontroller
- Microcontroller Vs Microprocessor
- Introduction to AVR
- Architecture & Features
- Memory segmentation
- Types of Packages
- PIN Diagram
- I/O Ports

SESSION II:

4. Introduction to Embedded C Programming

- Difference b/w C & Embedded C
- Introduction to AVR Studio & WinAVR
- Introduction to Functions, Conditional Statements, Loop Statements
- Header Files
- How to program a microcontroller?
- Startup with Blinking
- Burning up AVR

5.Hardware Description

- Detailed discussion of Development Board
- Microcontroller & Peripheral Components
- 60 rpm dc gear motors
- Battery & MEMS Sensors

6. Projects Build & Coding

Session III

7. Sensors

- Introduction to Sensor
- Types Of Sensors
- Working principle of IR Sensor
- Circuitry of Sensor

8. Making Robot: Running Motors

- DC Geared Motor
- L293D Motor driver IC
- Pin diagram of IC
- Embedded Projects implementation & testing

Session IV

Project Making & Query Session

PROJECTS COVERED:

- ✓ Starting Up with LED Blink
- ✓ Autonomous LED Patterns
- ✓ Black Line Follower Robot
- ✓ Intelligent Line Follower
- ✓ White Line follower
- ✓ Edge Avoider Robot
- ✓ Obstacle Avoider using IR
- ✓ Brain controlled Robot

KIT CONTENT:

- ✓ IR Sensor Pair
- ✓ USB Programmer
- ✓ Screw Driver
- ✓ B.O Type Motors
- ✓ Wheels
- ✓ Caster Wheel
- ✓ Chassis
- ✓ Screw Packet

Future Aspects:

If you are in beginning stage of Hardware Programming its the best platform.
You can start with it to go step ahead in Microcontroller level programming.