

## **Fitness Band workshop**

**Objective: Fitness Band** workshop would deal with detecting and monitoring a person health parameters with the help of band connected with mobile devices by bluetooth. Implemented by Arduino takes data from sensors and process it.

### **Session 1: Introduction to Robotics.**

- Introduction to basic of Embedded System
- Memory organization in microcontrollers.
- Input & Output peripherals in Microcontrollers.
- Resisters in Microcontrollers.
- Programming of Microcontrollers.

### **Session 2: Display device introduction and Interfacing.**

- Introduction to LCD.
- Interfacing of LCD with Microcontroller.
- **Practical:** Character, string and number display on LCD.
- Introduction to Input Devices & Sensors
- Introduction to ADC
- Accessing internal ADC of microcontroller
- Introduction of temperature sensor
- Interfacing temperature sensor with microcontroller
- **Project**– Digital Thermometer
  
- Interfacing and Programming of **Heartbeat Sensors**
- **Project-** Heart Beat counter
- **Serial communication & Bluetooth Technology**
- Accessing internal USART of microcontrollers.
- Interfacing Bluetooth module with microcontrollers.
- Transmitting & receiving data wirelessly through Bluetooth of Laptop/Android mobile phone.

### **Session 3: Project**

Bluetooth Control wireless notice board.

Explanation of the Health Band Programming and Complete Assembly

Working with Android Application.

Testing of Health Band with Android Application.

### **Session 4: Query**

- Certificate Distribution