



# Humanoid Workshop

## Day 1:

### Session 1

Introductory & Theoretical session

- Introduction to Robotics.
- Robots and Law of Robots.
- Future aspects.
- Need of Microcontrollers in Autonomous Robots.
- Different parts of Robot.
- Wide description about Microcontrollers.
- Wide description about Atmega8 Memory organization in microcontrollers.
- Input & Output peripherals in Microcontrollers.
- Resisters in Microcontrollers.
- Programming of Microcontrollers.

### Session 2 :

- Kits Distribution
- Softwares Installation
- Practical session
- Introduction of Arduino
- Input / Outputs of Arduino
- Interfacings of peripherals.
- Output devices interfacings.
- Practical 1: Programming for LED interfacings with Arduino.
- Practical 2: Different modes of LED blinking.

## **Day 2 :**

### **Session 3**

- Motor Interfacing
- Types of motors
- Actuators to be used in Robots.
- Wide description about Servo Motor
- Interfacing of Servo Motor with Arduino
- Practical 3: Controlling different angles of servo motors
- Practical 4: Development of structure of Robotic Leg
- Project 1: Development of a Robotic Leg.

### **Session 4**

- Humanoid Structure
- Body Parts of the Robot
- Joints and Lengths calculations
- Dimensions and curves
- Clamps and their fitting
- Project2: Humanoid Structure Development
- Humanoid Structure Development Continued...
- Testing of all the Joints and Rotation of all motor angles