

# Workshop on ROBO AUTOMETA by Robo Species Technologies Pvt. Ltd

**RoboSpecies™**  
Explore > Innovate > Enjoy Technologies Pvt. Ltd.  
An ISO 9001 : 2008 Certified Company

Accredited by:  
**IAO** INTERNATIONAL ACCREDITATION ORGANIZATION HOUSTON U.S.A.

in Association with **Sportech<sup>15</sup>**  
IIT-DELHI

Presents  
**ROBO-ZEST 2015**  
Innovation Meets Imagination  
International Robotics Workshop Series cum Championship

**HIGHLIGHTS**

- Learn from Industry Experts
- Free Robotic Kit in a Team
- Win Prizes upto ₹ 150000
- Get Discount upto ₹ 2000 in STP'15
- Team size 5-6 members

**International Certificate** from RoboSpecies Technologies Pvt. Ltd. Accredited By **IAO, Houston, U.S.A.**

**100% Money Back Guarantee**

**TECHNOLOGIES**

- Autonomous Robotics
- PCB & Circuit Designing
- MATLAB
- Haptic & Robotic Arm
- UAV & Quadcopter
- Industrial Automation
- ARM Processor
- Swarm Robotics
- Gesture Recognition
- Image Processing

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Finals to be conducted at Sportech'15  
**Indian Institute of Technology, Delhi**  
भारतीय प्रौद्योगिकी संस्थान, दिल्ली

For more details visit:  
[www.robomezest.com](http://www.robomezest.com)  
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**Workshop Date:** 22-23<sup>rd</sup> September 2014.

## Course Content - Type-2: “Robo-Autometa”

### Day 1

1. Introduction to Robotics, Robot Meaning demystified., Introduction to vastly emerging field of Robotics, Application of Robotics: Industrial, Medical, Entertainment, New and upcoming technologies, Manual Robotics (Theory), Introduction to manual robotics, DPDT connections demystified, Motor Principle explanation, Different types of manual robots and their applications, Different chassis designs, Different types of competitions, Introduction to Embedded systems, Embedded systems explanation, Applications of embedded systems, Microcontrollers and Microprocessors demystified, Introduction to Arduino, Arduino board explanation, Introduction to different types of Arduino shields, Arduino software IDE installation, Basic Arduino Shield, Interfacing output components like LED, Buzzer, LED pattern generation, Interfacing Input components like switch, LDR.

## **Day 2:**

Analog Input/Output, Interfacing basic components and getting analog I/O, □ Fading of LED, Reading Analog data from LDR, Introduction to Autonomous Robotics, Autonomous robotics explanation, Different types of sensors used, Programming methodology, Applications of Autonomous Robots, Introduction to different types of sensors and their applications, Detailed explanation of Infra Red sensors, IR sensors demystified, Interfacing IR Sensors with Arduino, Introduction to different types of IC's, Introduction to Motor Driver Shield: L-293D, L-293D circuit simplified, Interfacing L-293D with Arduino, Controlling motor with push button, 12. DC Motor Speed control, Controlling speed of DC motor, Line-Follower Without Microcontroller, Line-Follower concept explanation, Interfacing IR Sensor and L-293D, Line-Follower without programming, Line-Follower with programming, Interfacing IR sensors and motor driver, Line-Follower robot programming, Line-Follower completion

## **Hands-on Projects:**

Sensors Interfacing and calibration, LED matrix(blinking and pattern generation), Motor Control Line Follower Robot with/without microcontroller, Edge Avoider Robot with/without microcontroller, Obstacle Detector Robot with/without microcontroller, Obstacle Avoider Robot with/without microcontroller, Wall follower Robot, Path Finder Robot

## **Kit Content- ROBO-AUTOMETA**

### 1) Manual Robotics Kit

- 1 Chassis, 2 Motors, 2 Big Wheels, 1 Castor Wheel, Rainbow Wire, Single Strand Wire, Rainbow Wire, Batteries.

### 2) Arduino Board

- RoboSpecies Roboduino Board with Atmega 8P IC and inbuilt boot loader.
- Based on Arduino Duemilanove architecture.
- Best open source technology.

### 3) Motor Driver Shield

- RoboSpecies Arduino compatible L-293D motor Driver shield.
- Original ST Microelectronics L-293D IC.
- On-Off Switch option.
- Separate 5v and Gnd pins.

### 4) Basic Shield

- RoboSpecies Arduino compatible basic electronics shield.
- LED's, Buzzer, Switch, Variable Resistors, LDR etc.

### 5) IR Sensor Pair

- 2 Infrared Sensor pair
- For detecting black and white surface
- 3 pin out

### 7) Other Components

- Wire cutter, Screw Driver, Black Tape, Wires, Batteries, Screws
- RoboSpecies CD and study material