



**CLUB FIRST**  
WHERE IDEAS COME IN SHAPE

For Improvement & Research in Science & Technology

## **CLUB FIRST TECHNO EDUSOLUTIONS PVT.LTD.**

### **"SURROGATE"**

**Hands on workshop on.....**

**“Computer & Mobile Navigation system”**

**Register: - <http://www.clubfirst.org>**

#### **Contacts:-**

For any query and registration

Bhuvanesh (8058496808)

#### **In brief:-**

Robotics has come long way. Especially for mobile robots in the past, they were controlled by heavy, large and expensive systems that would not be carried and had to be link via cables. Today, however we can build small robots with numerous actuators and sensors that are control by inexpensive, small and light embedded computer system that are carried on-board. Also with the invent of cheaper wireless modules it has now become possible for multiple robots to communicate with each other and do a particular task also known as CLUB FIRST Techno Edusolutions Pvt. Ltd. **This workshop presents a unique combination of mobile robots, embedded system design and software programming.** The focus of this workshop is to introduce to the students various methods of communication that can be used to transfer data between multiple machines.

#### **Duration**

It is a 3 day's workshop for engineering students who want opportunities to extend beyond learning theoretical concepts to transfer this knowledge into practical Robotics.

#### **Who Should Attend?**

Engineering students who want **to gain an insight into autonomous robotics and wireless communication** but do not know where to start. This workshop will cover everything from development of **autonomous robots , wireless communication of a robot with a PC to wireless communication of multiple robots with each other to understand there surrounding environment cumulatively and do tasks together .**

#### **After completing this workshop, you will be able to:**

##### **Topic 1: Basic Electronics & Components**

- Introduction to Electronics
- Need of Electronics
- Introduction to robot
- Introduction to Active & Passive Components
- Relays, Transformer & Switches

##### **Topic 2: Introductions to the IC's**

- Hardware Fundamentals
- Definition of an IC
- Types
- Identification



**Topic 3: Study of Some Basic IC's**

- Study of basic logic gates
- Identification of IC's used for logic gates
- Working principal of op-amps
- Regulator (7805, 7812)
- Motor drivers (L293D)
- Comparators (Lm324)
- Mobile DTMF decoder (cmd8870)
- Timer IC (555 timer)
- RF Encoder (ht2e)
- RF Decoder (ht12d)
- And other IC's which used in practical circuits with practical sessions.

**Topic 4: Study of Sensors**

- Identification of sensors
- Working principal of sensors
- Light sensors (LDR, IR-Photo diode)
- Sound sensors (microphone)

**Topic 6: Study of High Frequency Wireless Module**

- Introduction of wireless communication
- RF modules
- RF transmission & reception
- Interfacing TWS-434/RWS-434 high range wireless system with computer
- Interfacing TWS-434/RWS-434 high range wireless system with mobile
- Wireless data transmission of computer & mobile

**Registration Details**

Participants have to register online in a team of five students.

**The total payable amount** (inclusive Minilab robotics materials for a team of five members)

**4000/- Per Team for Gyan Vihar Students.**

**5000/- Per Team for Outsider Students**

**Workshop Duration- 3 Days on 13-15 Feb 2012** 18 hrs Hands on workshop.

**Certification-**

Every participant will be certified after successful completion of the training from "CLUB FIRST Techno Edusolutions Pvt. Ltd., India,"

**Website:** - <http://www.clubfirst.org>

**E-mail-**

For information [info@clubfirst.org](mailto:info@clubfirst.org)

For registration [register@clubfirst.org](mailto:register@clubfirst.org)

**Financial Terms-**

**Kit Charges- 2200/- Per Team**

**Training Part- 1200/- Per Team**

**Venue- Gyan Vihar University, Jaipur.**



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Mini lab provided to per Team

<b>COMPONENTS</b>
Bread Board
Nose Pliers
Wire Cutter
Parallel Port 25 Pin Male With Cap
Ht12e/Ht12d Pair
Voltage Regulator 7805
L293d
Lm324
Dtmf Decoder Cmd8870
Photodiode/Ir Led Pair
Ldr/White Led Pair
Micro Phone
Capacitor 47 $\mu$ f
Capacitor 1000 $\mu$ f
Crystal 3.58mhz
Bread Board Wire (Black)
Bread Board Wire (Red)
Bread Board Wire (Blue)
Bread Board Wire (White)
Pot 10k
Tws-434/ Rws-434 Pair RF Module
Multimeter
Battery 6
Gear Motor 45 Rpm(Metal Gear)
Tyre
Rolar Caster
Resistance 10k Ohm
52k Ohm
300k Ohm
100k Ohm
750k Ohm
220 Ohm
Lane wire
Box (Antistatic)
Components Box
Robo base
Note Pad/Pen/Notes