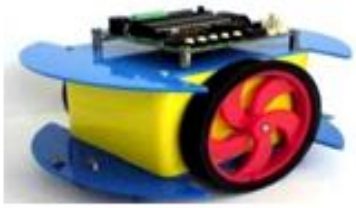
A Report of Workshop on

" A U T O N O M O U S R O B O T S "



Organized on

20-21st September, 2013

Organized by

E.E.E./ELECTRICAL ENGINEERING DEPARTMENT

GROW MORE FACULTY OF ENGINEERING, HIMATNAGAR

Conducted by

Technophilia System-Institute of USA

WORKSHOP

ON

AUTONOMOUS ROBOTS

"The principal goal of education is to create men and women who are capable of doing new things, not simply repeating what other generations have done."

E.E.E. and Electrical Department of degree engineering was held 2-day workshop on 20-21st September, 2013 at seminar hall (Room No. 106) on the subject ***"AUTONOMOUS ROBOTS".***The purpose this workshop is to teach the fundamentals of designing and building autonomous robots by integration with a microcontroller. It also focuses on conceptualization and designing of complex systems and will help clear concepts related to embedded systems, artificial intelligence and automation.

The registration of workshop was started at 9:00am. After the registration students had taken the tea with breakfast.

REGISTRATION OF THE STUDENTS & TEA-BREAK

After Registration the Opening Ceremony was started. On that occasion, Prof. D. J. Patel (Development Officer, GMGI) was present as Guest of honor. Mr. A. M. Pandya (Director of Grow more School) was present as Chief Guest. Other dignitaries, Dr. Samir Patel (Principal, GMFE), Prof. Bharat Suthar (H.O.D. of EEE & Electrical Dept.) and Mr. Amit Dubey (Technophilia system) were also present on the Dias.

Apart from the theoretical session, participants were working on autonomous robotic kit specially designed by Team Technophilia. This kit includes, Microcontroller based board, Sensors, Actuators etc. Hands on sessions on this kit helped the participants to enhance their embedded C programming and PC hardware interfacing skills.

OPENING CEREMONY

After the opening ceremony, the Workshop was started at 11:00 a.m. on 20th September 2013.Students from 5th EEE, 7th EEE, other colleges & department faculty members attended the workshop. It was divided in two days.

DAY-1

The Expert-Mr. Amit Dubey (Technophilia system) demonstrated and introduced the basic of Microcontroller, Types of Autonomous Robots with the help of PPT.

MR. AMIT DUBEY ADDRESSING THE STUDENTS

The main contents of this workshop on the first day were:

- Details on Microcontroller
- Programming the controller using Embedded C
- Interfacing & controlling various devices like Keypad, LED, Buzzer, Motor, Sensors etc. with Microcontroller
- Making of various types of Robots their algorithm and coding
- Application of Microcontrollers & Embedded C in industry, military, medical, home-appliances, home automation etc.

At 1:30 pm, we have taken the lunch. After half hour lunch break, the second session of day-1 was started at 2:00 pm. The main objectives of this session were:

- Types of Autonomous Robots
- Elements of Autonomous Robots
- Microcontroller based Robots
- Pre Programmed Robots
- Self-Learning Robots

The workshop ended at 5:30pm on first day.

DAY-2

On the second day, the workshop was started at 9:30a.m. First of all the Expert Mr. Amit Dubey (Technophilia system) gave the basic idea about the DC motors, sensors, actuators etc. The main contents of this session were.

- **Programming:**
  - Embedded C
  - Use of Embedded C IDE
  - Use of Burner/Flashing tools
  - Writing code in Embedded C
  - Implementation of various algorithms in Embedded C
  - Implementation of Artificial Intelligence using Embedded C
- **Actuators:**
  - DC Geared Motors
  - Stepper Motors
  - Servo Motors
- **Motor Drives:**
  - Motor Driver using Transistor
  - H-bridge IC Motor Drives
- **Sensors:**

- Light: LDR, Photodiodes, Phototransistors
- Heat: Temperature sensor LM35
- Sound: Microphone, Ultrasonic
- Mechanical Touch Sensor

- **Power Supplies:**
  - AC Adaptor, Different types of batteries

ROBOTS MADE BY STUDENTS

At 1:00pm, we have taken the lunch**.** After half hour lunch break, the second session of day-1 was started at 1:30pm. In this session Mr. Amit Dubey explained to the participants that how to make the robots with the help of the kit specially designed by Team Technophilia. Finally, students interacted with the expert person and cleared their all doubts.

CERTIFICATE DISTRIBUTION TO THE PARTICIPANTS

At the end of this session, one quiz competition was conducted by expert. From this competition, three groups were selected for nation level competition. At the end of this workshop, certificates were distributed to the participants by the faculty members of the EEE department.

GROUP PHOTO OF ALL FACULTY MEMBERS, EXPERT & STUDENTS AT THE END OF WORKSHOP

The workshop ended at 6:00pm on 21st September, 2013 which was full of knowledge & motivation.

Prof.Bharat D Suthar (HOD, EEE department)

Prof.M.J.Patel (Coordinator)

Prof Nirav Patel (Coordinator)

Prof. Rahul Patel (Coordinator)