

# Advanced Robotics

60 Hours exhaustive hands on training program on Advanced Robotics, based on the actual practical hands-on training. This course would provide the participants knowledge and experience on the fast growing field of Robotics and Embedded Systems. The program is an ideal foundation for Engineering, Diploma and Science students striving to enter this exciting field.

- Course Duration – 1 month

## **Course Outline :-**

- Introduction to Robotics.
- Knowledge on Basic Electronic Components.
- Soldering & Disordering Practices.
- Basics of sensors & actuators.
- Wireless Devices.
- Introduction to Microcontrollers.
- Programming Concepts :-
  - GPIO Interface.
  - APC.
  - LCD interface.
  - Path Tracing Logics.
  - PWM interface.
  - Advanced Optimised line following using feedback logics.
  - Serial Communication Protocol (UART).
- Introduction to wireless Robots.
- Digital & Analogue sensor interface.
- Flexible analogue sensor interface.
- DTMF interface.
- Windows – Robot Interface.
- Stepper Motor Interface.
- Servo Motor Interface.
- Gesture Technology.
- PID Basics.

## **Work Platform :-**

- AVR Microcontrollers.
- Embedded C.
- X-CTU