

## Embedded Systems-Arduino

### Session : 1 Basics of Electronics

➤ Resistor, Disc capacitor, Electrolytic capacitor, LED, Crystal oscillator, LCD Display, 7-segment display, Matrix keypad, DC Motor & Driver, Stepper Motor & Driver, DTMF Decoder, IR LED, IR sensor, IR Photo diode, 4 bit Encoder/ Decoder and wireless Session : : etc.

### Session : 2 Introductions to Arduino

- Architecture of ATmega8
- AVR hardware Detail- I/O Port
- AVR Clock Oscillator
- Difference between Microcontroller and Microprocessor

### Session :3 Programming in Embedded C

- Basic of C Programming for Arduino
- Basic function uses in C Programming
- Conditional operators if else, switch etc.
- Loops- while, for etc.

### Session :4 Interfacing with AVR

- LED Interfacing
- Relay & Buzzer Interfacing
- DC Motor with Interfacing
- 16x2 LCD display Interfacing
- Serial port Interfacing
- Matrix Keypad Interfacing
- 7-Segment Display Interfacing
- Mobile (DTMF) Interfacing
- Infra-red Sensors Interfacing
- Wireless Session : : Interfacing
- Analog to Digital Converter Interfacing

### Session : 5 Project realizations

- Obstacle avoiding Robot
- Line Following Robot
- Mobile control Robot
- Wireless controlled Robot

### Session : 6 PCB Fabrication - Live Demo

- Introduction to PCB hole components and packaging
- Familiarization with SMD components and packaging
- Schematic Drawing
- Board Layout

#### Duration

Duration: 45 Days

#### Benefits

10% discount on any RoboZZ Lab's product

Group discount of 10% on a batch of 10 students and above.