

## Embedded Systems-8051

### 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 8051 MCU

➤ Architecture of 8051 core AT89S52  
 ➤ 8051 hardware Detail- I/O Ports  
 ➤ 8051 Clock Oscillator  
 ➤ Reset circuit  
 ➤ On Chip Peripherals  
 ➤ Intro of In-system-Programmer (Burner)

### Session : 3 Programming in Embedded C

➤ Basic of C Programming for 8051  
 ➤ Basic function uses in C Programming  
 ➤ Conditional operators if else, switch etc.  
 ➤ Loops- while, for etc.

### Session : 4 Interfacing with 8051

➤ 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 technologies  
 ➤ Familiarization with through 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.