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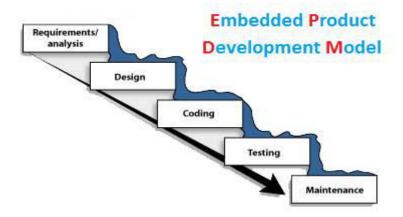
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**Embedded Technosolutions** is a Professional Training Institute & a Company which Working for Indian MNCs & Medium/Small Scale Industries in Product R&D, Development, Manufacturing & Customization.

Our training sessions are purely practical, based on industrial standard.



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### Course Objectives

- 1. To provide professional and industrial standard training which will help the students to get job in the core industries
- 2. To learn practical orientation of actual industrial product design
- 3. To learn Embedded C Programing which is the important part of Embedded Product Development
- 4. To learn Programming of Internal Peripherals in Embedded C
- 5. To learn 8051 Architecture in detail
- 6. To learn Hardware Requirements for 8051
- 7. Learn wireless communication , wireless modules & their interfacing
- 8. To learn the designing of Real World Projects



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### **Course Syllabus**

### **Microcontroller 8051**

#### Chapter 1

- 1.1 Introduction to Embedded Systems
- 1.2 Scope in Embedded Systems

#### **Chapter 2**

- 2.1 Introduction to microcontroller 8051 series
- 2.2 Hardware architecture of controller
- 2.3 Controller I/O ports
- 2.4 Memories of controller
- 2.5 Registers and Register bank of controller
- 2.6 Concept of Serial communication ,Interrupt etc.

- 3.1 Introduction of Embedded Software
- 3.2 Introduction of Embedded C Programming and programming concepts



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3.3 Introduction of program burning / flashing software

#### Chapter 4

- 4.1 I/O interfacing concept
- 4.2 Led Blinking logic and delay generation routine
- 4.3 Design of Traffic Light Controller System

#### Chapter 5

- 5.1 Character LCD 16x2 interfacing logic and concept
- 5.2 Introduction of LCD command and data signals
- 5.3 LCD based programming
- 5.4 Practical project based on character LCD

- 6.1 Matrix keypad interfacing logic and concept
- 6.2 Introduction of key pad interfacing using polling method
- 6.3 Matrix keypad programming
- 6.4 Practical project based on matrix keypad



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#### **Chapter 7**

- 7.1 Introduction to serial communication
- 7.2 Serial communication concept
- 7.3 Introduction of serial communication firmware and registers
- 7.4 Serial communication programming
- 7.5 Practical application based on Serial communication

- 8.1 Introduction of interrupts in controller
- 8.2 Interrupt logic and concept
- 8.3 Interrupt routines / programming
- 8.4 Key interfacing using interrupts
- 8.5 Practical application based on interrupt



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### **Wireless Communication**

#### **Chapter 1**

- 1.1 Introduction of DTMF mobile technology
- 1.2 DTMF technology interfacing in real application
- 1.3 DTMF programming
- 1.4 Practical project design based on DTMF technology

#### Chapter 2

- 2.1 Introduction of RF Communication
- 2.2 RF technology interfacing in real application
- 2.3 RF module programming
- 2.4 Practical project design based on RF technology

- 3.1 Introduction to RFID communication
- 3.2 RFID technology interfacing in real application
- 3.3 RFID module programming
- 3.4 Practical project design based on RFID technology



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### 8051 with 7 Projects

- 1. Traffic Light System
- 2. Door Bell
- 3. Password Protecting System
- 4. Notice Board
- 5. PC Control Appliances
- 6. DTMF Based Universal System
- 7. RFID Protocol Based Security System



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