

# 8051 With Interfacing

Note: Candidates joining this course must have the knowledge of C programming. The course will be focused only on 8051 programming and interfacing devices.

## Introduction

- Microprocessor Vs Microcontroller
- The Instruction Set Architectures
- CISC Vs RISC
- The Memory Architectures
- Harvard Vs Von Neumann Architecture

## Introduction to 8051 Core

- Architecture and Features
- CPU Specifications
- Operating Parameters
- Peripherals and IO components
- Memory Organization – CPU Registers and SFRs

## Assembly Programming Concepts

- Addressing Modes
- Instruction Set
- Arithmetic and Logic Instructions
- Data Transfer Instructions
- Flow Control Instructions
- Miscellaneous Instructions
- Simple Assembly Programming Exercise

## Peripheral Programming

- Ports: Input/output
- Timers & Counters
- Interrupts, UART

## Concept of Programming

- Cross Compiler
- Embedded C Implementation, Programming and Debugging
- Memory Models
- Library reference
- Use of #pragma directive
- Functions, Parameter passing and return types

## External Interfaces

- LEDS
- Switches
- LCD (4bit, 8bit modes)
- Keypad Matrix

