



## Embedded C for PIC MicroControllers

Course Fee	Rs 13,570/- (inclusive of taxes)	Duration	15 sessions (2 hours per session)
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**Summary:** This course is designed for those who need to be proficient in 8-bit microcontrollers that are commonly used in automotive actuators, industrial instrumentation and control.

**Prerequisites:** Basic knowledge of electronics, Familiarity with digital logic, hardware design.

**Audience:** Firmware design engineers who have learnt about microcontrollers but have no practical experience in Microchip platforms at the C language level.

### Course Contents

- PIC Architecture and EDS-16F87X system demo with C program
- Introduction to embedded C
  - Embedded C compiler
  - Build projects, debugging C/ASM/HEX files
- Basic concepts about C
  - Data types, constants, variables
  - C declarations
  - Loop Control Statements
  - Pre-processor Directives
  - Array, Pointers, structures, Operators
- ADC, Timers and Interrupts, PWM
  - Analog to Digital converter initialization and operations
  - Timers and counters functions
  - Timer Overflow Interrupts
  - PWM Generation
- Serial Communication
  - Serial Communication using USART

Programming examples in C language will be provided to demonstrate the capability of arithmetic and logical data processing capabilities. Programming examples in C language will be provided to demonstrate the capability of PIC microcontroller interface with peripherals for new product design. The peripherals of PIC16F877A will be used as an example and students will be required to execute tasks that demonstrate typical routines used in new product designs. Students will also be required to draw the schematics of typical interfaces that are common in power electronics, motor control and instrumentation domain.

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