PIC 16F 887A: Course Content

Introduction to Embedded Systems, Microchip PIC Microcontrollers

- PIC 16F Series: PIC 16F 887A, General Features
- Architecture of PIC 16F 887A
- Pin Out / Description
- Memory Organization, Configuration Registers
- I/O Port Programming
- A.D.C. Programming
- Introduction to I2C
- Using Timers, Timers Programming
- Serial Communication (U.A.R.T.), Serial Port Programming
- Introduction to Interrupts

Embedded Programming in MPLAB Software

- Introduction to MPLAB IDE, Compiler
- Features and S/w Development
- Compiling, Debugging and Creating Hex File
- Programming the PIC Microcontroller

Hardware Interfacing and Practical Sessions

- LED
- Character LCD
- Seven Segment, Multiplexing of Seven Segment
- Switches, Keypad Matrix
- Relays
- IR, LDR (Using ADC)
- DC Motors
- USB to Serial Converter
- LM 35 (Temperature Sensor)

Extra Hardware Interfacing and Practical Sessions (Optional)

- LED Matrix
- Graphic LCD (128*64)
- Interrupts Programming (Serial, Hardware, Timer Interrupts)
- RTC DS1307 (Using I2C Programming)

Project Based on PIC 16F 877A

- Based on Various Technologies (RF Communication, IR, Access Systems, Security Systems, Robotics, Automation Systems, Accelerometer, etc)

Kit Contents

- PIC USB Programmer
- PIC Development Board + Microcontroller
- Connectors