

## **Course Syllabus:**

**DURATION: 75 HOURS**

- Definition of Embedded System
- Why for Embedded System
- Application of Embedded System
- Examples of Embedded System
- What is Microprocessor?
- What is Microcontroller?
- Difference between MP and MC.
- Uses and Advantages of MC
- Types of microcontrollers
- Memory architecture
- Different type of architecture
- What is interrupt?
- External hardware interface technique
- Programming the controller: assembly language
- Introduction to C language
- How to develop the embedded software
- Compiler, Debugger, Eimulato, Emulator.

### **8051 – Microcontroller**

- Internal memory architecture
- Instruction set
- I/O Access
- Interrupts
- Timers – Timers 0, Timers 1
- External Interrupt
- UART Communication
- Interfacing with PC with different baud rates
- Matrix keypad interfacing
- Lcd interfacing
- Introduction to keil software
- Creating and loading projects
- Debugging and simulating projects

## PIC – Microcontroller

- Internal memory architecture
- PIC features
- Instruction set
- I/O Access
- Led Testing
- Interrupts
- Timers – Timers 0, Timers 1, Timers 2
- ADC accessing
- UART Communication
- 12c
- How to generate PWM
- Internal EEPROM interfacing
- Matrix keyboard interfacing
- Lcd interfacing
- External sensor interface
- Introduction to MPLab Software
- Hitech
- Creating and loading Projects
- Debugging and simulating projects
- Sample Programs