

## 8051 40 HOURS SYLLABUS

DAY	FORE NOON	AFTER NOON
<b>DAY 1</b>	<p>Introduction of Embedded Technology Introduction of Embedded Computing, Advantages of Embedded systems Application and examples</p> <p>Introduction of 8051 Pin configuration of 8051, Register structure of 8051. Hardware and software part of Embedded Systems, Instruction sets in 8051</p> <p>Assembly level programming, Embedded C programming Hardware and software part of Embedded Systems</p>	<p>Keil software PROTIUS software</p> <p>LED Interfacing circuit and Program Program implementation with Trainer kit [LED Interfacing ] Execution</p>
<b>DAY 2</b>	<p>LCD interfacing theory LCD interfacing with microcontroller &amp; circuit LCD interfacing program Program implementation with Trainer kit Execution</p>	<p>7SEG interfacing theory 7SEG interfacing with microcontroller &amp; circuit 7SEG interfacing program Program implementation with Trainer kit Execution</p>
<b>DAY 3</b>	<p>Keypad interfacing theory Keypad interfacing with microcontroller &amp; circuit Keypad interfacing program Program implementation with Trainer kit Execution</p>	<p>Interrupt interfacing theory Interrupt interfacing with microcontroller &amp; circuit Interrupt interfacing program Program implementation with Trainer kit Execution</p>
<b>DAY 4</b>	<p>Relay interfacing theory Relay interfacing with microcontroller &amp; circuit Relay interfacing program Program implementation with Trainer kit Execution</p>	<p>DC motor interfacing theory DC motor interfacing with microcontroller &amp; circuit DC motor interfacing program Program implementation with Trainer kit Execution</p>
<b>DAY 5</b>	<p>PROJECT THEORY</p> <p>Circuit Program</p>	<p>LAB PROJECT EXECUTION</p>

## PIC 40 HOURS SYLLABUS

DAY	FORE NOON	AFTER NOON
<b>DAY 1</b>	<p>Introduction of Embedded Technology Introduction of Embedded Computing, Advantages of Embedded systems Application and examples</p> <p>Introduction of PIC16F Pin configuration of PIC16F, Register structure. Hardware and software parts of Embedded Systems, Instruction set</p> <p>Assembly level programming, Embedded C programming Hardware and software part of Embedded Systems</p>	<p>Keil software PROTIUS software</p> <p>LED Interfacing circuit and Program Program implementation with Trainer kit [LED Interfacing ] Execution</p>
<b>DAY 2</b>	<p>LCD interfacing theory LCD interfacing with microcontroller &amp; circuit LCD interfacing program Program implementation with Trainer kit Execution</p>	<p>7SEG interfacing theory 7SEG interfacing with microcontroller &amp; circuit 7SEG interfacing program Program implementation with Trainer kit Execution</p>
<b>DAY 3</b>	<p>Keypad interfacing theory Keypad interfacing with microcontroller &amp; circuit Keypad interfacing program Program implementation with Trainer kit Execution</p>	<p>Interrupt interfacing theory Interrupt interfacing with microcontroller &amp; circuit Interrupt interfacing program Program implementation with Trainer kit Execution</p>
<b>DAY 4</b>	<p>Relay interfacing theory Relay interfacing with microcontroller &amp; circuit Relay interfacing program Program implementation with Trainer kit Execution</p>	<p>DC motor interfacing theory DC motor interfacing with microcontroller &amp; circuit DC motor interfacing program Program implementation with Trainer kit Execution</p>
<b>DAY 5</b>	<p style="text-align: center;">PROJECT THEORY</p> <p>Circuit Program</p>	<p>LAB PROJECT EXECUTION</p>

## ARM 40 HOURS SYLLABUS

DAY	FORE NOON	AFTER NOON
<b>DAY 1</b>	<p>Introduction of Embedded Technology Introduction of Embedded Computing, Advantages of Embedded systems Application and examples</p> <p>Introduction of LPC2148 Arch structure of LPC2148 Register structure. Hardware and software parts of Embedded Systems, Instruction set</p> <p>Assembly level programming, Embedded C programming Hardware and software part of Embedded Systems</p>	<p>Keil software PROTIUS software</p> <p>LED Interfacing circuit and Program Program implementation with Trainer kit [LED Interfacing ] Execution</p>
<b>DAY 2</b>	<p>LCD interfacing theory LCD interfacing with microcontroller &amp; circuit LCD interfacing program Program implementation with Trainer kit Execution</p>	<p>6xpush interfacing theory 6xpush interfacing with microcontroller &amp; circuit 6xpush interfacing program Program implementation with Trainer kit Execution</p>
<b>DAY 3</b>	<p>Keypad interfacing theory Keypad interfacing with microcontroller &amp; circuit Keypad interfacing program Program implementation with Trainer kit Execution</p>	<p>Interrupt interfacing theory Interrupt interfacing with microcontroller &amp; circuit Interrupt interfacing program Program implementation with Trainer kit Execution</p>
<b>DAY 4</b>	<p>Buzzer interfacing theory Buzzer interfacing with microcontroller &amp; circuit Buzzer interfacing program Program implementation with Trainer kit Execution</p>	<p>RTC interfacing theory RTC interfacing with microcontroller &amp; circuit RTC interfacing program Program implementation with Trainer kit Execution</p>
<b>DAY 5</b>	PROJECT THEORY	LAB
	Circuit Program	PROJECT EXECUTION

## PLC 40 HOURS SYLLABUS

### CLASS SCHEDULE: LD MICRO

DAY	FORE NOON	AFTER NOON
<b>DAY 1</b>	<p>Introduction to PLC            Architectural evolution of PLC            Introduction to PLC programming            Addressing concept,            Introduction bit byte and word concept</p> <p>PLC Fundamentals            PLC components            i. Power Supply            ii. CPU            iii. I/O modules            iv. Communication Bus</p>	<p>Software LAB            Various ranges available in PLCs            Plc Programming With Simulation            Addressing concepts            Bit, byte &amp; word concept</p> <p>Programming instructions            arithmetic and logical            Load /and /or/out / and Read / Write</p>
<b>DAY 2</b>	<p>LAB</p> <p>BASIC INPUT AND OUTPUT CONCEPTS            LED INTERFACING            PUSH BUTTON INTERFACING</p>	<p>LAB</p> <p>TIMER BASED            DELAYED TURN ON            DELAYED TURN OFF            RETENTIVE DELAYED TURN ON            COUNTER APPLICATION:            COUNT UP            COUNT DOWN            COUNT CIRCULAR</p>
<b>DAY 3</b>	<p>LAB</p> <p>CLOCK PULSES            ONE SHOT RISING EDGES            ONE SHOT FALLING EDGES            PWM GENERATION            CONTROL MOTOR            LAMP</p>	<p>LAB</p> <p>DC MOTOR</p>
<b>DAY 4</b>	<p>LAB</p> <p>SENSOR INTERFACING            IR            PIR</p>	<p>LAB</p> <p>SENSOR INTERFACING            TEMP            HUMIDITY</p>
<b>DAY 5</b>	<p>LAB</p> <p>SERIAL COMMUNICATION</p>	<p>LAB</p> <p>ROOM LIGHT CONTROL</p>

## WORKSHOP SYLLABUS

WS ON	FORE NOON	AFTER NOON
<b>8051</b>	<p>Introduction of Embedded Technology Introduction of Embedded Computing, Advantages of Embedded systems Application and examples Hardware and software parts of Embedded Systems, Interfacing concept, Instruction set</p> <p>1.LED 2.LCD 3.KEYPAD 4.RELAY</p>	<p>1.DC MTOR 2.INTERRUPT 3.BUZZER 4.SENSORS 5.RF 6.ZIGBEE</p>
<b>PIC</b>	<p>Introduction of Embedded Technology Introduction of Embedded Computing, Advantages of Embedded systems Application and examples Hardware and software parts of Embedded Systems, Interfacing concept, Instruction set</p> <p>1.LED 2.LCD 3.KEYPAD 4.RELAY</p>	<p>1.DC MTOR 2.INTERRUPT 3.BUZZER 4.SENSORS 5.RF 6.ZIGBEE</p>
<b>ARM</b>	<p>Introduction of Embedded Technology Introduction of Embedded Computing, Advantages of Embedded systems Application and examples</p> <p>Introduction of LPC2148 Arch structure of LPC2148 Register structure. Hardware and software Instruction set</p> <p>1.LED 2.LCD 3.6XPUSH 4.KEYPAD</p>	<p>1.INTERRUPT 2.BUZZER 3.RTC 4.SERIAL 5.EEPROM 6.ADC</p>

## WORKSHOP SYLLABUS

WS ON	FORE NOON	AFTER NOON
<b>RF</b>	Introduction of Embedded Technology Introduction of Embedded Computing, Advantages of Embedded systems Application and examples Hardware and software parts of Embedded Systems, Instruction set Inter facing concept RF interfacing with microcontroller Program  1.LCD 2.SENSORS 3.KEYPAD 4.RELAY	1.DC MOTOR 2.INTERRUPT 3.BUZZER 4.Home Automation 5.Car Robot
<b>ZIGBEE</b>	Introduction of Embedded Technology Introduction of Embedded Computing, Advantages of Embedded systems Application and examples Hardware and software parts of Embedded Systems, Instruction set, Inter facing concept Zigbee interfacing with controller Program 1.LCD 2.SENSORS 3.KEYPAD 4.RELAY	1.DC MOTOR 2.INTERRUPT 3.BUZZER 4.Home Automation 5.Car Robot
<b>SENSORS</b>	Introduction of Embedded Technology Introduction of Embedded Computing, Advantages of Embedded systems Application and examples Introduction of sensors Inter facing concept with microcontroller 1.IR 2.LDR 3.VIB 4.Temperatre	1.Pressure 2.Heartbeat 3.Eye ball 4.Eye blink 5.Metal detector 6.Ultrasonic

WS ON	FORE NOON	AFTER NOON
<b>GSM</b>	Introduction of Embedded Technology Introduction of Embedded Computing, Advantages of Embedded systems Application and examples Introduction of GSM Hardware and software Inter facing concept GSM interfacing with microcontroller GSM Program  1.LCD 2.SENSORS 3.KEYPAD 4.RELAY	1.DC MOTOR 2.INTERRUPT 3.BUZZER 4.Home Automation 5.Car Robot

Note:

1. For 40 hours syllabus, morning session 4 hours and afternoon session 4 hours.

### Authorized signatures

**S.SANTHOSHKUMAR**

Managing Director

Brain Labs

Chennai – 17.

Mobile: +91 9566236196

PH : 044-42607372