TICO ™

MICROCHIP ATMEL RENESAS ARM

PROJECT BASED TRAINING IN EMBEDDED SYSTEM DESIGN
ON INDUSTRY MOST POPULAR 8 BIT AT 89S52 FROM ATMEL USA.

QUALITIES OF INSTITUTE:

1. *Awarded Best Institute in Embedded (2010-11) & (2009-10)*

2. *ISO 9001:2008 Certified*

3. *Trained more than 3000 students since 2002*

4. *Individual PC & training kit for each student for better learning*

5. *Individual attention to each student*

6. *Well tested and proven training methodology*

7. *Fully furnished lab and separate theory class rooms*

TRAINING METHODOLOGY

Theory Practical **ratio 30 % : 70%**
Main focus is given on fundamental understanding

FACULTY MEMBERS

All faculties' members are from TICO R&D lab. They are enriched in their industrial experience.

HARDWARE TOOLS

Trainer Kit: Highly New Advanced 89s52 kit developed by TICO

SOFTWARE TOOLS

Assembler: 8051 IDE (Editor Assembler Simulator) Writing program using the IDE

COURSE MATERIAL

Each student will be given a copy, Microcontroller reference manual, lab manual, A TICO CD containing valuable resources.

COURSE DETAILS

Introduction to Embedded Systems
Introduction & Market Demands
Component of Embedded systems

Hardware Fundamentals
Basic Electronic
Digital Electronic
Opamp, Comparator

Introduction to Microcontroller
Brief introduction of Microcontroller
INTEL, Philips, AVR, Microchip
Binary Number systems
The 8051 Architecture
Hardware Details
8051 Registers
Memory Organization
Port Organization
On Chip Peripherals
8051 Interrupts
Instruction Set
Addressing Modes
Programming Languages
Programming The 8051
Programming Tools and Techniques

Learning Modules (hands on Practical)
Theoretical aspect of each module

Practical implementation

Led Interfacing
How it works. How LEDS will rotate
How to connect with microcontroller
What is sourcing & sinking?

Linear Keys
What is the type of switches?
Their types & function

Matrix Keypads
How they work
How to interface with microcontroller

Seven Segment Display
What are the types of display?
Difference between Common Anode and Cathode
Driving circuits

LCD (Liquid Crystal Display)
What is LCD?
How to give LCD commands
How to interface LCD with Micro

Relays
What are the different types of Relay?
How it connect with microcontroller.

CONSULTANCY | DESIGNING | TRAINING | MANUFACTURING

Piezo buzzer (Alarm unit)
How does a buzzer sound?

Opto Couplers
What are optocoupler?
Interfacing Opto-Isolators

Stepper motor
How a stepper motor works
How to drive stepper motor

DC Motor
How a dc motor works
Motor drivers IC

On Chip Timer
What is a timer? How does a 51timer works?
How to make accurate delay using timer. Timer
Interrupts How to write code for timer?

On Chip Counter
Counter Interrupts. How does it work?
What are the different modes of counter?
How to write code?

External Interrupt
What is an interrupt? How does it work?
How to write code?

Additional Interfaces
Concept of Real world interfacing devices like electrical home Appliance/sensors activators, electromechanical devices

Sensors:
Temperature Sensor LM 35, Light Intensity sensors, Voltage sensors, Current sensors,IR sensors
Photo diode

Analog to Digital Converter
ADC 0809, How it works, Interfacing with microcontroller, How to write the code

PROJECT WORKS
After successful completion of training, you can make following types of minor/ Major industrial projects **(Only One)**

Robotics:
Line Follower Robot
Anti collision Robot
DTMF Based Remote mobile Robot
RF Based Robot
Voice controlled robot

Home Automation:
Electrical energy Saver
Real Time Clock based automatic Device Control
Home security system
Centralized controlling home Through PC

Industrial Automation:
Data logger& Process monitoring
Temperature indicator and controller
Lift Control Model with Stepper motor
Frequency monitoring & Set point switching
Speed control of AC motor using triac

Bio Medical Instrumentation
Multi channel monitoring system for Biomedical CO_2, Heart Beat, Temp, Light

Telecom
Master Slave communication through Serial port
DTMF based remote home appliances control

Office security/Automation
Smart Card Access Control System with RFID cards (125 khz)
Time Attendance Monitoring system
Bank Token Display
RGB Color Pattern generator

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5 - SMART BENEFITS:-

1. **Multi time boost in Confidence level and understanding of Embedded world.**
2. **Certification:** A certificate will be awarded to each student. This will be recognized as a Industrial training certificate in engineering colleges.
3. **Project :** You will be able to do your minor and major projects of academic value on your own
4. **Gateway:** This will be a gateway for Embedded Technology
5. **Improve JOB chances:** A fast emerging technology for Electronics professionals.

An Investment in Knowledge Pays Best Returns. Benjamin Franklin

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Duration:	
Timing:	
Batch Time:	
Start date:	
Investment in Knowledge	

CONSULTANCY	DESIGNING	TRAINING	MANUFACTURING