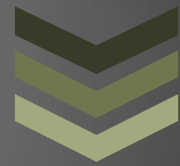# PINE TRAINING ACADEMY

Course Module

YOUR CAREER, OUR PASSION

4 Month Certified Course In Embedded System Design.

Address

D-557, Govindpuram, Ghaziabad, U.P., 201013, India

+91 9999 0 37484

vaibhav.mishra@pinetrainingacademy.com

Pine Training Academy

4/18/2014

Advanced Embedded System		
Module	**Detailed Syllabus**	**Duration**
Module – 1 Introduction to Semiconductor and Embedded system.	❖ Introduction to Pine Training Academy. • Introducing Embedded System and Philosophy. • Embedded Design and Development Process. ❖ Introduction to Semiconductor Industry. • Exposure of Semiconductor Segment. • Introduction of Semiconductor Company as per Segment. ❖ Introduction of Vendor product. • For e.g. brief Study of Atmel/Freescale/Microchip/Renesas/TI Product. • Atmel/Freescale/Microchip/Renesas/TI Product used in Semiconductor Industry Application ❖ Analog and Digital. • Study of Digital and Analog Components.	Week 1.
Module – 2 Embedded Hardware Concepts.	❖ Embedded hardware: - • A practical view:- ➢ Signal levels. ➢ Timing. ➢ Early physics. ➢ Embedded Memories. ➢ RAM, DRAM, ROM, FLASH. ❖ 8051 microcontroller:- • Architecture. • Memories Organization Real world interfacing. • Basic programing concepts of 8051. ❖ Road map of general MCU product (Atmel/Freescale/Microchip/Renesas/TI) and its application in semiconductor industry.	Week 2.

Module – 3 Embedded Software Concepts.	❖ Programing Languages:-
	   • Assembly level programing techniques.
	
	❖ Lab exercises:
	   • Basic assembly level programming examples and hands on MCU EVM KIT, development tool etc.
	
	❖ Introduction to Compiler & assembler and element of C programing and basic Labs for functions, pointers, structure and file handlings.
	
	❖ Basic of Embedded C and programming. Embedded C programming exercise on MCU EVM KIT.
		Week 3.

Module – 4 Embedded Microprocessor and Microcontroller.	❖ Introduction to Processors:-
	   • ARM Architecture.
	   • Instruction Set for ARM.
	   • Assembly language programing, Interrupt.
	
	❖ Overview :-
	OMAP3530, TI3537 ARM based Platform (Beagle Board As per availability).
	
	❖ Embedded C programing concepts and example for ARM and interfacing concepts.
	
	❖ Embedded C programing Example on ARM.
		Week 2.

Module – 5 Embedded device and Bus.	❖ WDT, RTC and N/W Embedded System.
	❖ Serial communication protocol:-
	   • UART.
	   • IIC.
	   • SPI.
	   • McBSP.
	   • USB
	❖ Parallel communication protocol:-
	   • ISA.
	   • PCI.
	   • PCIe.
		Week 2.

Module – 6 Embedded Linux System Design and	❖ Introduction to Embedded Linux. Architecture of embedded Linux system, Linux Kernel Architecture Memory	Week 6.

Development.	Organization.	
	❖ Linux start-up sequence, BSPs.	
	❖ Introduction to Cross Compilers & GNU Cross tool chain.	
	❖ Embedded Linux Porting concept.	
	❖ Introduction to device drivers and kernel modules.	
	❖ Writing Embedded Drivers: Serial, USB etc.	
Module– 7 Real Time Operating System.	❖ Introduction to RTOS examples. ❖ Real Time Kernel Object, Tasks, threads, Semaphores, Massage Queue, Pipes etc. ❖ Exceptions, Interrupts, Synchronization & Common design Problems. ❖ Real Time and Linux and programing.	Two Week
Module – 8 Embedded Application Project	❖ Embedded Application Project : • RF. • Wireless. • Control. • Image processing. • Signal Processing.	One Week

Schedule for 4 Month certified Course in Embedded System Design

Batch Start: 3rd August, 2015.

Date of Written Test: 18th and 19th July 2015.

Declaration of Written Test Result: 20th July 2015

Date for Interview: 25th and 26th July 2015.

Declaration of Interview result: 27th July 2015.

Date of Registration: 28th July 2015.

Batch Size: 25 seats.

Duration: 6 month, 5 Days in a week, 6-8 hrs. Per day***.

Eligibility Criteria:

1. B.E. or B. Tech /M.Tech with Average 60 % from E & C, E & I, E & E, Computer Science .
2. Written Test and Personal /Technical Interview.

Written test and interview based on both objective and subjective:

1. Basic Analog and Digital Electronics and Engineering Subject.
2. Aptitude Verbal and Non-Verbal.

Perquisite (Syllabus for written test and Interview):-

1. Knowledge of Basic Digital System and Analog.
2. Knowledge of Basic C, MCU, MPU, Matlab/Simulink and ARM (Optional).

Required:-

LAPTOP: – With Minimum Configuration DUAL CORE or i3 or i5 Processor, 2/4 GB DDR3, 500 HDD with window XP or Window 7.

FEES and Payment Schedule Details:
Course Fees: Rs 40000 (Fourty Thousand) +14 % Service Tax for Certified Course in Embedded System Design.

Registration Fees: Rs 5000(At a time of joining, after final selection).
Student can submit fees in two instalment including service tax within one Month.

Mode of Payment- Through Cheque or Cash.

*END