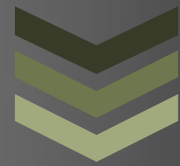


PINE TRAINING ACADEMY



Course Module

LENOVO

Summer Training on ASIC Layout and Design

Address

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

+91 9999 0 37484

vaibhava.mishra@pinetraini
ngacademy.com



Pine Training Academy

8/15/2016

ASIC Design (Analog LAYOUT)		
Main Module	FPGA LOGIC System Design using Verilog	Duration
Module -1 Digital System Design.	<ul style="list-style-type: none"> ❖ Digital System Design:- <ul style="list-style-type: none"> • Introduction to Digital System. <ul style="list-style-type: none"> ○ Number System ○ Digital Logic Levels • Digital Logic Circuits. <ul style="list-style-type: none"> ○ Combinational Logic Circuit. ○ Sequential Logic Circuit. • 	Week-1 Month 1
Module – 2 UNIX	<ul style="list-style-type: none"> ❖ UNIX <ul style="list-style-type: none"> • Basic of UNIX, how different from Windows. • Introduction of SHELL. • File and Directories. • Home Directories Introduction and .cshrc file formation. • Basic Commands-cp,mv,rm,touch,which, mkdir,cat • UNIX sed , cut ,awk,grep (regex),tr commands. • BASH shell scripting, usage of loops, arguments, array. 	Week 2 Month 1
Module -3 Schematic Design	<ul style="list-style-type: none"> ❖ BASIC COMPONENTS AND OHM’S LAW <ul style="list-style-type: none"> • Resistance • Capacitance • Inductor • Series Combinations • Parallel Combinations • KVL/KCL • Introduction to Filters • Low Pass Filters (Passive) • High Pass Filters (Passive) ❖ PHYSICS OF SEMICONDUCTORS AND DIODE CIRCUITS <ul style="list-style-type: none"> • WORKING OF SEMICONDUCTOR DEVICES <ul style="list-style-type: none"> • Diodes • Bipolar Junction Transistors • MOSFETS ❖ Fabrication Process <ul style="list-style-type: none"> • Oxides, poly silicon and Metal 	Week 3 Month 1

	<ul style="list-style-type: none"> • Photolithography • Diffusion and Ion implantation • Contacts, Vias • Silicide's, CMP • Self-aligned MOSFET fabrication • N-well and Isolated P-dell (DNW) <p>❖ CMOS Fabrication process and Introduction to layout</p> <ul style="list-style-type: none"> • CMOS Fabrication Flow • Latch Up • Prevention of latchup • Basic Layout concepts for MOSFETs <p>❖ CMOS INVERTER</p> <ul style="list-style-type: none"> • Basic circuit and its operation • DC characteristics • Critical voltages in inverter characteristics • Switching characteristics and Power dissipation • 	
CUSTOM IC LAYOUT		
Module – 4 Beginner Custom IC Layouts.	<p>Logic gates and Standard Cells</p> <ul style="list-style-type: none"> • CMOS Logic gates • Driving large loads • Standard cell library • HANDS ON <p>Standard cell Layout</p> <ul style="list-style-type: none"> • Architecture of standard cell • Abutment and Half design Rule • Standard cell track and its calculation 	Week 4 Month 1
Module 5 Project	Project Based on Design and Layout	Week 1,2,3,4 Month 2