VLSI Syllabus

Module 1 : Advanced Digital Design

CMOS Logic
Combinational Design
Sequential Design : State Machines
Basic Electrical Properties : Ids-Vds relationship, MOS transistor threshold voltage, gm, gds, figure of merit, metastability, notice margins, power, fan-out, design rules, skew, timing consideration
Introduction to IC design / Different Methods of IC design

Module 2 : CMOS Theory & Implementation

MOS – NMDS / PMOS / CMOS Tech
Fabrication Process
Design with CMOS gates
Characteristics of CMOS
Scaling Effects
Sub-micron design.
Parasitic Extraction & Calculations
Sub system Design
Stick Diagram / color coding modeling

Module 3 : HDL Simulation & Synthesis

VHDL
Verilog

Module 4 : ASIC Design flow & Specifications

ASIC Modeling
ASIC Logic Design
Naming Rules
Testability
Reliability Considerations
Different Technology Options
Power Calculations
Package Selection
Clock Methodologies
ASIC SOC

Paradise: 213, CTC (' A' Block), Parklane, Secunderabad – 03, Ph: 04066489969
Nallakunta: 2-1-551, Near Shankermutt Temple, Hyderabad – 47 Ph: 9701770707
E-Mail: training@sigmasolutions.co.in www.sigmasolutionsindia.com

Module 5 : FPGA Architecture and Implementation

Introduction.
Design Entry.
Functional Simulation.
Design Synthesis.
Post-Synthesis Simulation.
Design Implementation
Timing (Post Implementation) Simulation