

**Advanced FPGA Design (Practical Oriented Training)**  
**Course Duration: 10 Weeks (Sundays: 10:00 AM to 1:00 PM)**  
**Commencing from Sunday, 09th July 2023**

### **Course Content**

**1) Introduction to FPGA Design and**

**FPGA design Flow**

- a. PAL, CPLD and FPGA basics
- b. FPGA Design Flow

**2) FPGA Architecture**

- a. Internal Architecture of FPGA and CPLD
- b. Logic implementation

**3) HDL Basic**

- a. Introduction to VHDL/VERILOG
- b. Design methodology using VHDL/VERILOG

**4) FPGA Simulation and Synthesis Tool Flow**

- a. Modelsim/Aldec simulation
- b. Design Synthesis using Synplify PRO

**5) FPGA Implementation Design Flow**

- a. Design constraining and pin locking
- b. Static Timing Analysis

**6) Timing Simulation and Programming**

- a. Timing Simulation using Modelsim/Aldec
- b. Programming using JTAG

**7) System Level testing and debugging**

- a. Debugging techniques
- b. Identification of the issues/resolving

**8) NIOS II CPU implementation on FPGA.**

- a) Hardwarw and Software Implementation and Debugging.
- b) Implenting Ethernet, UART, SPI, LED, Dual Port memory communication on FPGA

**9). Hands on Practical Exposure with Altera DE-0 Nano Development Board**

***Course Fee: Rs.15, 000/- (Excluding 18% GST)***

***25% discount for IETE Members.***

***50% discount for Students.***

***Fee inclusive Course materials, Certificate and other miscellaneous charges.***

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