VIT®
Vellore Institute of Technology®
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School of Electronics Engineering



One-Day Hands-on Workshop on

FPGA DESIGN USING VHDL

(with AMD Xilinx Vivado)



For B.Tech – ECE Students

About the Workshop

A hands-on workshop to provide practical exposure to FPGA-based digital design using VHDL and AMD Xilinx Vivado Design Suite. Students will learn to design, simulate, synthesise, implement and test digital circuits on FPGA hardware.

Workshop Objectives

- ✔ Understand FPGA architecture and applications.
- ✔ Gain proficiency in VHDL for digital design.
- ✔ Ues Vivado for design entry, simulation and implementation.
- ✔ Implement and test digital designs on FPGA hardware.

Expected Learning Outcomes

On successful completion, participants will be able to:

- ✔ Explain FPGA architecture and its applications.
- ✔ Develop digital systems using VHDL.
- ✔ Simulate and verify designs using Vivado.
- ✔ Perform synthesis, implementation and timing analysis.
- ✔ Generate bitstreams and test designs on an FPGA board.

Technical Sessions

Session 1 *Introduction to FPGA & VHDL*
- FPGA architecture and applications
- Basics of VHDL and design flow

Session 2 *Getting Started with Vivado*
- Vivado IDE and project creation
- VHDL design entry

Vivado®

Session 3 *Simulation and Verification*
- Behavioral simulation
- Testbench development
- Waveform analysis

Session 4 *Design Implementation on FPGA*
- Synthesis and implementation
- Pin designment, constraints and bitstream generation

Session 5 *Hands-on Experiments*
- Counters and sequence detectors
- FSM-based controller (e.g., Traffic Light Controller)
- Design download and testing on FPGA board

Date
(One Day)
13th Dec 2026

Venue
VIT, School of Electronics Engineering Laboratory

Registration
Open for
B.Tech – ECE, EEE, CSE, IT Students

Prerequisite
Basic knowledge of Digital Electronics

Certificate
Certificate of Participation will be provided

Registration Fee: Rs. 250 Including GST

Convert Your Digital Design Ideas into Real-World FPGA Hardware!

Registration Link: *https://events.vit.ac.in/*

Contact Number: **9790995827**