10EI307 DIGITAL SYSTEM DESIGN

Credits: 4:0:0

Course Objective

- To provide an in-depth knowledge of the design of digital circuits and the use of Hardware Description Language in digital system design.

Course Outcomes

- Students will be able to design different programmable logic devices.
- Students will have the knowledge of FPGA architecture.
- Students will be able to design the combinational & sequential logic circuits in FPGA.
- Students can be able to write the program in VHDL & Verilog code.

Unit I

Programmable Logic Devices: Basic concepts - Design of combination and sequential circuits using PLD’s - Programming techniques - programmable read only memory (PROMs) - Programmable Logic Array (PLA) - Programmable Array Logic (PAL) - Design of state machines using ASM- ASM chart- ASM realization.

Unit II

FPGA and CPLD: Types of ASICs - Semi custom and full custom IC design- Design Flow - Type of FPGA – Xilinx XC3000 Series – Xilinx XC4000 Series -Logic Cell Array (LCA) – Configurable Logic Blocks (CLB) Input/output Blocks (I/OB) – Programmable Interconnects - CPLD-Altera Max 7000 Series.

Unit III


Unit IV


Unit V


Reference Books: