DIGITAL SYSTEMS DESIGN LAB SYLLABUS

Module 1: Introduction to Digital ICs

- Characteristics of Digital ICs
- Realization of Boolean Expressions
- Design and Verilog Modeling of Combinational Logic Circuits

Module 2: Data Path Elements

- Design and Verilog Modeling of Adders
- Design and Verilog Modeling of Multipliers
- Implementation of Combinational Circuits (FPGA/Trainer Kit)

Module 3: Data Path Circuits

- Implementation of Data Path Circuit (FPGA/Trainer Kit)

Module 4: Sequential Circuits

- Design and Verilog Modeling of Simple Sequential Circuits (Counters and Shift Registers)
- Design and Verilog Modeling of Complex Sequential Circuits
- Implementation of Sequential Circuits (FPGA/Trainer Kit)

Module 5: FSM-Based Design

- Design and Verilog Modeling of FSM-Based Design (Serial Adder)
- Design and Verilog Modeling of FSM-Based Design (Traffic Light Controller / Vending Machine)

Module 6: Design of ALU