



QEEE COURSES

DIGITAL SYSTEM DESIGN - DIGITAL ELECTRONICS

COURSE CONTENT:

- **Flip-flops:** SR, D, T, JK. Meta stability of flip-flops, **Registers:** shift registers, **Counters:** synchronous and asynchronous, Binary counter, Modulo Up and down counter, **Synchronous Counter design** using flip-flops, VHDL models for flip-flops, **Memory devices:** ROM
- FINITE STATE MACHINES
- **Mealy and Moore machines:** sequence detector, Mealy and Moore machine comparison, **Sequential network design:** state table, state graph. **State table reduction** using row reduction, using implication tables. State assignment rules, Equivalent state machines.
- ASM (ALGORITHMIC STATE MACHINE) CHARTS
- State machine design using SM charts, ASM realization using traditional method, MUX based design, one hot method, ROM based method.
- Design Examples: Traffic light controller, Dice game. Basics of asynchronous sequential networks