

# VLSI Design and Project Laboratory

Lab Area: 132.25 Sq.m



Electronics and Communication Project/VLSI Laboratory is a well equipped with 10 ACER I5 & 10 ACER I7 computers, Universal Programmers, Digital Storage Oscilloscope, Analog trainers, NI-ELVIS Board, IC Tester, Complete component development system, Regulated Power Supply, Function Generator, Cathode Ray Oscilloscope, Digital Multimeter, Microcontroller based board, Fpga/Cpld Based Board, Digital Control System, Magnetic Levitation, PsoC Cy3210psocval1-U Kit, Arm Controller Kit, Agilent Workbench(Dso3062a60mhz, 34405a Dmm 5.5 Digit,U3000a Elec. Instru. Trining Kit,33220a 20 Mhz Function Generator,E3631a Dc Power Supply, W1141b Vee 8.5 Software,82357b Usb/Gpib Interface,Dso, Ic Tester, Superpro IC Programmer, 15 Nos of Spartan3 XC3s100E Xilinx Basys2 Kits, Arm Controller kit BME 2368, Arm Cortex Eval Lpc1114, Wireless Sensor Network St108ni Elvis-li, Ni Defpga, Quanser Qnet Rotary Inverter Pendulum, Mechatronics Senser, NI My DAQ with Labview&Multisim Student edition, NI USRP2920, AGILENT workstation ,Dev Kit 8000 omap3530 Eval. Kit. Softwares Like MATLAB Simulink,signal pro.,Image Pro., DSP,Communication tool box ,Matlab Coder,Simulink coder, Embedded Coder (10 USERS),Labview 8.0, Altera Quartus II 6.0,Xilinx 9.2i,Microwind 3.0,Multisim 10,Ultiboard 10, PSoC® Designer 4.4are available in this laboratory. Students selects the project and under the supervision of faculty members and execute the same over a period of two semesters. In Basic VLSI Design course, students implement the logic related to digital circuit design in VHDL (Very High Speed Integrated Circuits Hardware Description Language) in software and then implement it on Kit using suitable data cables and peripherals like JTAG. The laboratory contains the implementation of different logic gates, 4:1 multiplexer, 4:1 MUX

using tri-state buffers, full adder / subtractor, odd-parity generator and checker, flip flops, BCD-EXCESS 3 code conversion, Linear Feedback Shift Register and more digital circuits in VHDL code and implementation on kit using Xilinx and Altera Quartus II 6.0 software. The laboratory contains CPLD trainer kits by Altera, CPLD trainer kit by Xilinx XC9572, FPGA trainer kits by Altera EP1K30QC208, FPGA trainer kits by Xilinx XC2S50PQ208C. DSP trainer (Xilinx -XC3S400), 3-Altera DE-I, DE-II, CY3209Express EVK, CY3210PSoCEVal1-U. (courtesy Cypress Microsystems(USA)), one printer.