GUJARAT TECHNOLOGICAL UNIVERSITY

Instrumentation & Control Engineering

(Applied Instrumentation)

M.E. Semester: IV

Subject Name: **Advanced VLSI Design**

Sr. No.	Course Content
1.	Introduction to design methodologies and design flows
2.	Architecting Speed, Architecting Area, Architecting Power
3.	High Level Design- Abstract Design Techniques, Graphical State Machines, DSP design
4.	Clock Domains, Implementing Math Functions, Reset Circuits
5.	Advanced Simulations, Coding for synthesis, Synthesis Optimization
6.	Floor planning, Place and Route Optimization
7.	Static Timing analysis

References Books:

1. Steven Kilts, Advanced FPGA Design, John Wiley & Sons, 2007
2. Wayne Wolf, FPGA Based System Design, Kluwer Academic Pubilshers, 2004
3. Stephen D. Brown, Robert J. Francis , Jonathan Rose and Zvonko G. Vranesic, Field-Programmable Gate Arrays, Kluwer Academic Publishers, 2006
4. Clive Max Filed, The Design.Warriors Guide to FPGA, Elsevier, 2004
5. Sabih H. Gerez, *Algorithms for VLSI Design Automation,* John Wiley & Sons