

GUJARAT TECHNOLOGICAL UNIVERSITY

Master of Engineering (VLSI System Design Engineering)

Semester – II

Subject Code: 1724204

Subject Name: HDL Based Design with Programmable Logic
(Major Elective –III)

Sr. No.	Course Content
1	Introduction
	VHDL for Behavioral, Data-flow and Structural Modeling
2	RTL, Finite State Machines, RTL Synthesis Test Methodology.
3	Programmable Logic Design, Basics of Programmable logic devices, CPLD Architecture and its building blocks, FPGA Architectures and its building blocks, Technology mapping for FPGAs
4	Design implementation using CPLD and FPGA,
5	Floor planning and Placement FPGA Architectures and Technology,
6	VHDL Synthesis for FPGA Implementation

Texts/References:

1. J.Bhasker, A VHDL Primer, Third Edition , PH/Pearson, 1999.
2. J.Bhasker, A VHDL Synthesis Primer, Second Edition, Star Galaxy, 1998.
3. J.Bhasker, A Verilog HDL Primer, , Second Edition, Star Galaxy, 1999.
4. J.Bhasker, A Verilog Synthesis : A Practical Primer, Star Galaxy, 1998.
5. M. J. S. Smith, Application Specific Integrated Circuits, AW/Person, 1997.
6. Z. Nvabi, VHDL: Analysis and Modeling of Digital Systems, Second Edition, MH, 1998.
7. J. Armstrong and F.G.Gray, , VHDL design Representation and synthesis, Second Edition, PH/Pearson, 2000.
8. P. J. Ashenden, The Designer's Guide to VHDL, Second Edition, Morgan Kaufmann, 2001.
9. D. Naylor and S. Jones, VHDL: A Logoc Synthesis Approch, Chapman and Hall, 1997.
10. J.Pick, VHDL: Techniques, Experiments and Caveats, MH, 1996.
11. C.H.Roth, Digital System Design With VHDL, PWS/Brookscoble, 1998.

12. M. G Arnold, Verilog Digital Computer Design : Algorithms to Hardware, PH, 1996.
13. Z. Navabi, Verilog Digital System Design, MH, 1999.
14. S. Palnitkar, Verilog HDL; A Guide to Digital Design and synthesis, PH/Pearson, 1996.
15. D. E. Thomas and P. R. Moorby. The Verilog hardware Description Language, Forth Edition, Kluwer, 1998
16. K. Coffiman, Real World FPGA Design with Verilog, PH, 2000.
17. D.R. Smith and P.D. Franzon, Verilog Styles for Synthesis of Digital System, AW/Pearson, 2001.
18. S.M. Trimber, FPGA Technology, , Kluwer, 1992.
19. J.V. Oldfield and R.C. Dorf, FPGAs : Reconfigurable Logic for Rapid Prototyping and Implmentation of Digital Systems, Wiley, 1995.
20. R.C. Seals and G.F. Whapshott, Programmable Logic : PLDs and FPGAs, MH, 1998.
21. A.K. Sharma, Programmable Logic Handbook: PLDs, CPLDs and FPGAs, MH, 1998.