



Electronics & ICT Academy

(Under Ministry of Electronics and Information Technology (MeitY), Govt. of India)

Indian Institute of Technology Guwahati, Guwahati, Assam, Pin 781039

Phone: +91-361-2583182/+91 7086502139

Email: eictiitg.nkn@gmail.com, eictacad@gmail.com, eictacad@iitg.ac.in

Pre-requisites of the NKN course on “VLSI Chip Design Hands-on using open source EDA”

1. Basic Knowledge of Electrical and Electronics – Refer to “**Electronic Devices and Circuit Theory**, by Robert Boylestad & Louis Nashelsky”
2. Basic knowledge of CMOS VLSI design – Refer to “**Digital Integrated Circuits – A Design Perspective, Second Edition**, by Jan M. Rabaey”
3. Basic knowledge of digital design – Refer to “**Digital Logic and Computer Design**, by Morris Mano”
4. Basic knowledge of chip design flow – Refer to “**VLSI Physical design – From Graph Partitioning to Timing Closure**, by Andrew Kahng, Igor L. Markov, Jens Lienig and Jin Hu”
5. Basic knowledge of Timing analysis – Refer to “**Static Timing Analysis for Nanometer Designs: A practical Approach**, by J. Bhasker, Rakesh Chadha”
6. Basic knowledge about timing constraints – Refer to “**Constraining Designs for Synthesis and Timing Analysis: A Practical Guide to Synopsys Design Constraints (SDC)**, by Sridhar Gangadharan, Sanjay Churiwala”
7. Basic knowledge about verilog/vhdl – Refer to “**Verilog HDL Synthesis – A practical Primer** by J. Bhasker” and “**VHDL: Programming by Example**, by Douglas Perry”
8. Basics of standard cell libraries – Refer to “**Characterization and modelling of digital circuits**, by Rohit Sharma”
9. Basics of TCL programming – Refer to opensource link -> <https://www.tutorialspoint.com/tcl-tk/>
10. Basics of Unix/Linux commands – Refer to opensource link -> <https://www.tutorialspoint.com/unix/>
11. Basics of standard characterization guidelines – Refer to “**CCS Timing Library Characterization Guidelines**, by Synopsys”