VLSI Design

Comprehensive Exam Syllabus

Reference:

N. H. E. Weste and David Harris, *CMOS VLSI Design: A Circuit and Systems Perspective*. 4th Edition, Boston: Addison-Wesley, 2010.

Syllabus and Topics:

Introduction to VLSI (chapter 1)

MOS Transistors, CMOS Logic, CMOS Fabrication and Layout, Design Partitioning, MIPS Microprocessor, Logic Design, Verification, Packaging and Testing

Delay (chapter 4)

RC Delay Model, Linear Delay Model, Logical Effort

Power (chapter 5)

Dynamic Power, Static Power, Energy Delay Optimization, Lower Power Architectures

Interconnects (chapter 6)

Interconnect Modeling, Interconnect Impact, Interconnect Engineering

Robustness (chapter 7)

Variability, Reliability, Scaling

Relevant course:

CSCE 585 – VLSI Design I