

Computer Engineering (CE)

The CE portion of the MS Written Comprehensive Exam will contain a question related to VLSI digital systems. This roughly corresponds to ECE260A (VLSI Digital System Algorithms and Architectures).

The related material is covered by the following textbook chapters:

- CMOS VLSI Design, A Circuits and Systems Perspective,” 4th Edition, Weste and Harris
 - Chapters 1, 2, 4, 9, 10, 11, 12
 - Basic concepts from Chapters 5, 6
 - This includes CMOS basics, MOS transistor theory, delay, sizing, power, scaling, interconnect, power, combinational circuit design (circuit families, static and dynamic circuits, pass-transistor logic, ratioed logic, etc.), sequential circuit design (flip flops, latches, dynamic circuits, synchronization, etc.), datapath subsystems (adders, comparators, counters, multiplication, shifters, etc.), array subsystems (SRAM, DRAM, ROM, etc.).

The above textbook has been used in ECE260A for a number of years. However, the person designing the exam question may not be the same as the most recent course instructor. It is important to study the material as presented in the textbook. Lecture notes and exams from specific offerings of the course can be useful in preparing for the comprehensive exam, but should not be your sole source of information.

For technical questions regarding the material covered in this course, contact the current or past instructors.