

ECE 394, Introduction to Computer Architecture, Fall, 2024

(Computer Organization and Design: The Hardware Software Interface)

Reading Assignments

Week	Assignment	Important Topics
1	1	zyBook Ch. 1.1: Introduction (Introduction to Computers) Ch. 1.2 – Ch. 1.4: Ch. 1.5: Technologies for building processors and memory
2	2	zyBook Ch. 1.6: Performance Ch. 1.7 – Ch. 1.8: Ch. 1.9: Intel Core i7
3	3	Handout 2a : Introduction to Structured Computer Organization 1.1.1: Languages, Levels, and Virtual Machines 1.1.2: Contemporary Multilevel Machines 1.1.3 Evolution of Multilevel Machines
4	4	Handout 2b : Introduction to Structured Computer Organization 1.2: Milestones in Computer Architecture 1.3: The Computer Zoo 1.4: Example Computer Families
5	5	zyBook Ch. 3.1: Introduction (The Processor) Ch. 3.2: Building a datapath
6	6	zyBook Ch. 3.3: An overview of pipelining Ch. 3.4: - Ch. 3.5 Ch. 3.6: Control hazards

Week	Assignment	Important Topics
7	7	zyBook Ch. 3.7: Parallelism via instructions Ch. 3.8: Instruction-level parallelism
8	8	zyBook Ch. 4.1: Introduction (Memory Hierarchy)
9	9	zyBook Ch. 4.2: Memory technologies Ch. 4.3: The basics of caches Ch. 4.4: Virtual machines
10	10	zyBook Ch. 4.5: Virtual memory
11	11	zyBook Ch. 5.1: Introduction (Parallel Processors) Ch. 5.2: The difficulty of creating parallel processing programs
12	12	zyBook Ch. 5.3: SISD, MIMD, SIMD, SPMD, and vector zyBook Ch. 5.4: Hardware multithreading
13	13	zyBook Ch. 5.5: Multicore and other shared memory multiprocessors Ch. 5.6: Introduction to graphics processing units
14	None	None
15	None	None All Readings Must Be Completed by Week 15!
16	None	None