

CS451/CS551/ECE441/ECE541 - Advanced Computer Architecture

Course Syllabus Fall 2023

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Text: *Computer Architecture - A Quantitative Approach*, 6th Ed, by Hennessy and Patterson

Zoom ID: 830 1263 1661

Lec	Day			Topic	Text/Ref
1	Aug	21	M	Introduction	
2		23	W	Quantitative Principles in Computer Design	Chap 1
3		25	F	Performance measurements, price/performance	Chap 1
4		28	M	Instruction Set Principles	Appendix A
5		30	W	Instruction Set Principles	Appendix A
6	Sep	1	F	Pipelining Concepts	Appendix C
		4	M	**** Labor Day - NO Classes ****	
7		6	W	Pipelining Concepts	Appendix C
8		8	F	Pipelining Concepts - performance concepts	Appendix C
9		11	M	Pipelining Concepts - performance concepts	Appendix C
10		13	W	Instruction-Level parallelism - concepts	Chap 3
11		15	F	Exploiting Instruction-Level parallelism	Chap 3
12		18	M	ILP - Dynamic scheduling	Chap 3
13		20	W	ILP - Dynamic scheduling	Chap 3
14		22	F	ILP - Dynamic scheduling	Chap 3
15		25	M	Exploiting ILP with software	Chap 3
16		27	W	Exploiting ILP with software	Chap 3
17		29	F	Memory hierarchy - caches	Appendix B
18	Oct	2	M	Memory hierarchy - caches	Appendix B
19		4	W	Memory hierarchy - optimizing performance	Chap 2
		6	F	**** Test 1 ****	
20		9	M	Virtual Memory	Chap 2
21		11	W	Virtual Memory	Chap 2
		13	F	**** Exam Review ****	
22		16	M	Memory performance optimization	Chap 2
23		18	W	Memory performance optimization	Chap 2
24		20	F	Memory performance optimization	Chap 2
25		23	M	Data-Level Parallelism	Chap 4
26		25	W	Data-Level Parallelism	Chap 4
27		27	F	Data-Level Parallelism	Chap 4
28		30	M	Multiprocessors	Chap 5
29	Nov	1	W	Multiprocessors - thread-level parallelism	Chap 5
30		3	F	Multiprocessors - thread-level parallelism	Chap 5
31		6	M	Multiprocessors - thread-level parallelism	Chap 5
32		8	W	Multiprocessors - thread-level parallelism	Chap 5
33		10	F	Multiprocessors - thread-level parallelism	Chap 5
		13	M	**** Test 2 ****	
34		15	W	Storage Systems	Appendix D
35		17	F	Storage Systems	Appendix D
	Nov	20 - 24		****Thanksgiving Break - NO Classes****	
		27	M	**** Exam Review ****	
36		29	W	Storage Systems	Appendix D
37	Dec	1	F	Storage Systems	Appendix D
38		4	M	Embedded Systems	Appendix E
39		6	W	Embedded Systems	Appendix E
40		8	F	Course Summary - Final Exam Review	

Final Exam: Thursday, December 14, 12:45 - 2:45 pm

Grading:

	CS551/ECE541	CS451/ECE441
Two Midterm Tests	40%	50%*
Final Exam	20%	25%
Assignments	20%	25%
Term Project	20%	*
Total	100%	100%

The letter grade you receive from the course will be determined as follows:

90% - 100%	A
89.9% - 80%	B
79.9% - 70%	C
69.9% - 60%	D
59.9% - 0%	F

The instructor reserves the right to adjust these percentages lower if deemed necessary.

* - CS451/ECE441 students may substitute a project in lieu of one of the midterm tests.

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