| Week | Day | Date | Lecture | Reading | Homework | Lab | Project |
|---|---|---|---|---|---|---|---|
| 1 | Thu | 1/9 | **1. Introduction** | | | Lab 1 | |
| | Fri | 1/10 | | | | | Labs are due the following Friday at 11:59pm |
| 2 | Tue | 1/14 | **2. Performance & Power** | H&P Ch 1., Appendix A, T. Mudge: Power: A First-Class Architectural Design Constraint | | | |
| | Thu | 1/16 | **3. Pipelining & Hazards I.** | H&P C.1-C.4 | | Lab 2 | |
| | Fri | 1/17 | | | | | |
| 3 | Tue | 1/21 | **4. Pipelining & Hazards II.** | | HW 1 due | | P1 due (Monday 1/20) |
| | Thu | 1/23 | **5. Scoreboard scheduling** | H&P C.5-C.7, 3.1-3.3, 3.10 | | Lab 3 | |
| | Fri | 1/24 | | | | | |
| 4 | Tue | 1/28 | **6. Scoreboarding & Tomasulo's** | H&P 3.4-3.6 | HW 2 due | | P2 due (Monday 1/27) |
| | Thu | 1/30 | **7. Speculation & Precise Interrupts** | H&P 3.8-3.9, Smith & Pleszkun: Implementing Precise Interrupts | | Lab 4 | |
| | Fri | 1/31 | | | | | |
| 5 | Tue | 2/4 | **8. P6 Microarchitecture** | H&P 3.13, D. Sima: Design Space of Register Renaming Techniques | | | P3 Milestone 1 (Monday 2/3) |
| | Thu | 2/6 | **9. Project description & Flipped P6** | | | Final Project Tips | |
| | Fri | 2/7 | | | | | |
| 6 | Tue | 2/11 | **10. MIPS R10K** | K. C. Yeager, The MIPS R10000 Superscalar Microprocessor, IEEE Micro, V. 16, No. 2, Apr. 1996. | HW 3 due | | P3 due (Monday 2/10) |
| | Thu | 2/13 | **10f. MIPS R10K Flipped** | | | Lab 5 | Final project proposal due + meetings |
| | Fri | 2/14 | | | | | Proposal meetings (continued) |
| 7 | Tue | 2/18 | **11. Instruction flow** | H&P Ch. 3.3, T. Yeh: A comparison of dynamic branch predictors that use two levels of branch history | | Midtern Review (Evening) | |
| | Thu | 2/20 | **Midterm (6-8 PM)** | | | | |
| | Fri | 2/21 | | | | | |
| 8 | Tue | 2/25 | **12. Wide instruction fetch** | H&P CH. 3.9, McFarling: Combining Branch Predictors | | | |
| | Thu | 2/27 | **Team time + Q&A (no lecture)** | | | Industry & Groupwork | Milestone 1 + Meetings |
| | Fri | 2/28 | | | | | Milestone 1 Meetings (continued) |
| 9 | Tue | 3/4 | **Spring Break** | | | | |
| | Thu | 3/6 | | | | | |
| | Fri | 3/7 | | | | | |
| 10 | Tue | 3/11 | **13. Memory Speculation** | | | | |
| | Thu | 3/13 | **14. Basic caches** | H&P 2.1 | | Lab 6 | |
| | Fri | 3/14 | | | | | |
| 11 | Tue | 3/18 | **15. Reducing miss rates** | H&P 2.2, 2.3, B.3, N. Jouppi: Improving direct-mapped cache performance | HW 4 due | | |
| | Thu | 3/20 | **Team time + Q&A (no lecture)** | | | Lab 7 | Milestone 2 + Meetings |
| | Fri | 3/21 | | | | | |
| 12 | Tue | 3/25 | **16. High Bandwidth Caches** | | | | |
| | Thu | 3/27 | **17. Prefetching** | | | | |
| | Fri | 3/28 | | | | | |
| 13 | Tue | 4/1 | **18. Virtual Memory** | | | | |
| | Thu | 4/3 | **19. Multiprocessors I** | | | | |
| | Fri | 4/4 | | | | | |
| 14 | Tue | 4/8 | **20. Multiprocessors II** | | | | |
| | Thu | 4/10 | **Team time + Q&A (no lecture)** | | | | Milestone 3 + Meetings |
| | Fri | 4/11 | | | | | |
| 15 | Tue | 4/15 | **21. Data level parallelism and SMT** | | HW 5 due | | |
| | Thu | 4/17 | **Final exam review** | | | | |
| | Fri | 4/18 | | | | | |
| | Sat | 4/19 | | | | | Final Project Due (11:59 pm) |
| 16 | Tue | 4/22 | **Project presentations** | | | | |
| | Thu | 4/24 | **No Classes** | | | | |
| | Fri | 4/25 | | | | | |
| 17 | Tue | 4/29 | **Final (8-10 AM)** | | | | |