
January 22, 23: First Discussion Session. Bookkeeping, overview, expectations, PL0

Programming Lab 0 is due, Sunday night, January 25, 11:59pm.
(The program itself will be empty. The purpose of the assignment is to make sure we are on the same page re: using the system.)

January 26: Lecture 2: Intro to Instruction Set Architecture, with examples taken from many diverse ISAs. ISA tradeoffs. Detailed discussion of LC-3b, with Assembly language constructs. The Assembler, how it works. PL1

January 28: Lecture 3: Microarchitecture, LC-3b data path, state machine, microsequencer.

January 29, 30: Discussion Session. ISA, microarchitecture, PL1.

February 2: Lecture 4: Microarchitecture, continued.

Problem set 1 due before class, February 4. (Emphasis: ISA, uarch of the LC-3b, the Assembly Process)

February 4: Lecture 5: Physical memory, unaligned access, interleaving, SRAM, DRAM

February 5, 6: Discussion session: Microarchitecture, Physical Memory, PL1.

Programming Lab 1 is due, Sunday night, February 8, 11:59pm.
(Write a program in LC-3b Assembly Language. Write an Assembler. Assemble the program you have written.)

February 9: Lecture 6: Physical Memory (continued).

February 11: Lecture 7: Virtual memory, page tables, tlb, VAX model, IA32 model, contrast with segmentation.

Programming Lab 2 is due, Sunday night, February 15, 11:59pm.
(Write a program in C that simulates at the instruction cycle level
the baseline LC-3b ISA. Test your simulator with the output of
the assembler for the application program written in Programming Lab 1.)

February 16: Lecture 8: Virtual memory, continued.

February 18: Lecture 9: Cache Memory

February 19, 20: Discussion Session. Emphasis on Virtual memory, PL3

Problem set 2 due before class, February 23. (Emphasis:
   Physical memory, virtual memory.)

February 23: Lecture 10: Cache Memory, continued.

February 25: Lecture 11: Integer Arithmetic

February 26, 27: Discussion session: Cache Memory, Integer Arithmetic, PL3

Programming Lab 3 is due, Sunday night March 1, 11:59pm.
(Finish the clock cycle level Simulator for the LC-3b.
   Test it on the application program written in Programming Lab 1.)


March 4: Lecture 13: The notion of Process, the unit of work managed by the Operating System, and its
implications on Interrupts and Exceptions and Virtual memory.

March 5, 6: Discussion session: Floating Point, Interrupts/Exceptions, Review for the exam.

Problem set 3 due before class, March 9. (Cache memory, arithmetic.)

March 9: Lecture 14: Review or catch up.

March 11: Lecture 15: Exam 1.

March 12, 13: Discussion session: Exam solution.
March 16-20: Spring break.


March 25: Lecture 17: Input/Output, continued.


March 30: Lecture 18: Pipelining, Branch Prediction. The HEP.

================================================================

March 30: Last day a graduate student can change registration
to/from credit/no_credit option.

================================================================

April 1: Lecture 19: Single-thread parallelism (SIMD, VLIW, Vectors).

April 2, 3: Discussion session: Branch Prediction, HEP, Vectors, PL4.

Programming Lab 4 is due, Sunday night April 5, 11:59pm.
(Interrupts/Exceptions)

April 6: Lecture 20: Single-thread parallelism (Tomasulo, HPS).

================================================================

April 6: Last day an undergraduate student may, with the
Dean's approval, withdraw from the University or drop a class
except for urgent and substantiated, nonacademic reasons.
Last day for an undergrad to change grading to pass/fail.

================================================================

April 8: Lecture 21: Single-thread parallelism (Data Flow).

April 9, 10: Discussion session: Tomasulo, Data Flow.

Problem set 4 due before class, April 13. (I/O, Branch Prediction,
Vectors, out-of-order execution.)

April 13: Lecture 22: Alternative Models of Concurrency: The Multiprocessor (Intro to Multiprocessing,
Amdahl's Law, Speed-up, efficiency)

April 15: Lecture 23: Interconnection networks, Cache Coherency, Sequential Consistency.
April 16,17: Discussion Session. Prepare for Exam.

Problem set 5 due before class, April 20. (Data flow, MP issues.)

April 20: Lecture 24: Review or catch up.


April 23,24: Exam solution, PL5

Programming Lab 5 is due, Sunday night April 26, 11:59pm.
(Virtual memory)

April 27: Lecture 26: Power and Energy considerations, bandwidth, accelerators.

April 29: Lecture 27: Pot Pourri (Measurement methodology, GPUs, Maxeler, etc.)

April 30, May 1: Discussion session: PL6

May 4: Lecture 28: Introduction (reprise!)

May 6: Lecture 29: Last class, free for all!

May 7,8: Discussion session. Review of the course.

Programming Lab 6 is due, Friday, May 8, 5:00pm. (Pipelining)
Problem set 6. A study guide, not to be turned in.

Final exam: Probably Friday, May 15, 7 to 10pm. (TENTATIVE) Note: The Registrar has the right to change the dates of the final exams. Please keep checking the Registrar’s web site and our announcements to be sure when/where the final exam will be given.