January 14: **First class meeting.** Introduction to the course, administrative details. Focus of the course. Architecture and Microarchitecture: Sciences of Tradeoffs.

January 15: **First discussion meeting.** The logic design of a simple ALU. Introduction to the CAD tools we will be using in the course.


January 20: Problem Set 1a due, 11:59pm.

January 21: Martin Luther King Day. No class.

January 22: Basic concepts in microarchitecture, continued.

January 23: The Intel Architecture 32 (nee x86), ISA and implementation issues.

January 28: The IA32 (continued).

January 29: Discussion section.

January 30: Architectural Choices.

February 1: Problem Set 1b due, 11:59pm.

February 4: Discussion section (as needed).

February 5: Discussion section (as needed)

February 6: Architectural Choices (continued).

February 8: Problem Set 2 due, 11:59pm.


February 12: Discussion section.

February 13: Alternative approaches, continued.

February 18: Discussion section.

February 19, 20: High Performance Implementation in the next decade.

February 25: The Naysayers Respond!

February 26: Discussion section.
February 27: Measurement methodology and abuses.

March 1: Problem Set 4 due, 11:59pm.

March 4: Review
March 5: Discussion section.

March 6: Exam 1.

March 11-15: Spring Break.

March 18,19,20: Individual group meetings to define individual implementations.

March 25, 26, 27: First Design Review in 541a ENS, by appointment.
[Problem Set 5 is to be handed in at that time.]

March 25: Branch Prediction.
March 26: Discussion section.
March 27: Branch Prediction, continued.

April 1: Block Structured ISA.
April 2: The Trace Cache
April 3: Compiler influences.

April 9: Discussion section.
April 10: Floating point (continued).

April 15: Cache Coherency, Memory consistency models.
April 16: Discussion section.
April 17: Review

April 22: Exam 2.

April 23: Discussion section as needed.
April 24: Case Study I: The microarchitecture of a Current Microprocessor.
April 29: Case Study II: The microarchitecture of a Current Microprocessor.
April 30: Case Study III: The microarchitecture of a Current Microprocessor.

May 1: Last class meeting. Review of the course.

Final project design reviews in 541a, April 29,30, May 1, by appointment.

May 10: Final project report due in 541a, 10pm.