Some of the Topics we hope to discuss during the semester:

1. Introduction and Focus
2. ISA tradeoffs
3. uarch tradeoffs
4. System tradeoffs
5. Run-time optimizations
6. Compile-time optimizations
7. Branch Prediction
8. Single thread parallelism
9. Multiple thread parallelism
10 GPUs (Combining SMT, Predication, and SIMD)
11 Spatial Computing (FPGA-centric)
12 Accelerator-centric microarchitectures
13. Integer Arithmetic.
14. Floating Point Arithmetic.
15. Cache Coherency
16. Memory consistency
17. Measurement methodology and abuses
18. RISC: A retrospective
19. Multi-core, Mega-Nonsense
20. My sense as to the critical requirements for the future
21. One or two guest lectures from local industry
22. Last class meeting. The free for all

Important dates:

January 24: Problem set 1a due before class
January 31: Problem set 1b due before class
February 7: Problem set 2 due before class.
February 14: Problem set 4 due before class.
February 15: Groups can start working together.
March 3-6: First design review
March 14-19: Spring break
March 21: no class
March 23: Written exam.
March 31, April 1-2: Oral exam in my office, EER 5-802
April 4: last day an undergrad can Q-drop for academic reasons, change to P/F
April 13: Guest lecture from Jim Keller
April 18: Guest lecture from Dick Sites
April 20: Guest lecture from Aater Suleman
April 25: Guest Lecture from Stephen Robinson
April 25: last day for a grad student to change to CR/NC
May 4: Last lecture (free for all)
May 5,6: Final design reviews
May 13: Final project report due in EER 5-802, 10pm, May 13.
Note: There will be no final exam in this course.