ECE 4100/6100
Advanced Computer Architecture
Spring 2011
Course Syllabus

Instructor: Prof. Hsien-Hsin Sean Lee
Email: leehs AT gatech_DOT_edu
Phone: 404-894-9483
Prerequisite: ECE 3055 Computer Organization and Operating System or the equivalent. (A Must)
Teaching Assistants: Yen-Fu Liu and Eric Fontaine

Course Description: This course is designed to teach fundamentals of modern computer architectures. Topics include performance, ISA, instruction-level parallelism (ILP), thread-level parallelism (TLP), dynamic scheduling techniques, out-of-order execution, register renaming, exception handling, static scheduling (VLIW/EPIC), cache/memory/DRAM/storage hierarchy design, speculation techniques, advanced branch predictor design, multiprocessor coherency issues, memory consistency models, multicore processors, and case studies e.g., the seminal P6 microarchitecture, Netburst, Core, Itanium, EM64T, Alpha 21x64, UltraSparc, etc. Also may be included are topics of new, emerging trends in architecture/microarchitecture/software development in the face of physical design challenges.

Course Web Pages:
- http://www.ece.gatech.edu/~leehs/ECE6100
- http://www.tsquare.gatech.edu (For all assignments, discussion, and grade posting.)

Class Meetings: TTh 3:05-4:25pm at Klaus 2456
Office Hours: TBD at Klaus 2318 or by Appointment.

Textbooks:

Course Slides and Schedule: Check out the course website constantly.

Grading:
- 4 to 5 programming assignments. Individual work. No late turn-in accepted. (50%)
- 3 in-class exams (30%).
- Final exam (20%)

Attendance: Since class lectures will include lots of material not covered in the text book, class attendance is mandatory if you care.

Honor Code: Students are expected to abide by the Georgia Tech Honor Code and to avoid any instances of academic misconduct in homework assignments and exams. Any violation will be immediately and directly reported to the Dean of Students’ Affairs for further action.