CSE 410 Spring 2008

Final Exam Topic List

P&H

- branch prediction
  - o static
  - o 1-bit
  - o 2-bit
  - o global history and local history
- Caches
  - o why we have them
  - o l1 and l2
  - o write back
  - o write through
  - o # of blocks per cache line
  - o Associativity of the cache
  - o How does the TLB act as a cache for the PT?
  - o How does main memory act as a cache for the hard disk
- Temporal locality (how we exploit this)
- Spatial locality (how we use this)

Dino Book

- Deadlock
- effective memory access time
- Locks, how to build them (check slides on atomic exchange)
- Flat PTs
- Multi-level PTS
- Inverted Page Tables with Hashing
- Memory Protection
- Virtual Memory organization
- Threads
- Processes
- CPU scheduling
  - o FCFS
  - o Round robin
  - o SJF
  - o Priority
- Sharing of memory between threads
- Sharing of memory between processes
- Synchronization of shared memory

- Synchronization of thread execution (conditions, monitors, locks)
- Monitors & conditions
- Critical Sections
  - Dining Philosophers
- Thrashing
  - Working set
- indefinite postponement
- Demand paging
- Paging with virtual memory
- MMU does what?
- Address binding (Logical or Virtual -> Physical)
- TLB benefits
- Preemptive scheduling
- Non-preemptive scheduling
- Preemptive kernel scheduling
- Non-preemptive kernel scheduling
- Spinlocks
- waiting locks
- binary (mutexes) and counting semaphores