ON THE FINAL

Topics I

• Linking
  – Static
  – Dynamic
    • Dynamic loading

• Function calls
  – Calling convention: arguments & return values
  – Stack frames/Activation records
  – Function pointers
    • qsort

Topics II

• Processes
  – Fork()
  – Address space, pages

• Dynamic Memory management
  – Stack
  – Heap
    • malloc/free
    • Bitmaps
    • Linked Allocation – Best fit, first fit, next fit, worst fit

Topics III

• System Calls
• Threading
  – Kernel Threads/User Threads
  – Thread vs process state

• Pthreads
  – Creating, yielding, joining

• Synchronization
  – Mutex, Condition Variable
  – Producer/Consumer

Topics IV

• Networking
  – Sockets: client and server

• Device Drivers

• C and Development miscellany
  – Makefiles, header files, static keyword, extern
  – Conditional Compilation
  – Errors with perror and errno
  – Buffering
**NOT ON THE FINAL**

- C Language stuff from first third
- Signals
- x86 assembly
- Binary/executable formats

**WHERE TO GO FROM HERE**

- **Architecture**
  - 1541 Introduction to Computer Architecture: prerequisites: CS0445, CS0447; offered each term
  - 1567 Programming and System Design Using a Mobile Robot: prerequisites: CS0441, CS0445; this is an honors course and admission is by special permission from the instructor only; offered once each year

- **Operating Systems**
  - 1550 Introduction to Operating Systems: prerequisites: CS0447, CS0449; offered each term
  - 1651 Advanced Systems Software: prerequisite: CS1550 or permission of instructor; offered once each year

- **Compilers/Programming Languages**
  - 1621 Structure of Programming Languages: prerequisites: CS0441, CS0445; offered fall term
  - 1622 Introduction to Compiler Design: prerequisites: CS0441, CS0447; offered spring term

- **Parallel Computing**
  - 1645 Introduction To High Performance Computing Systems: prerequisite: CS0447 and CS1501; offered every other year
  - 1538 Introduction to Simulation: prerequisites: CS0447, one statistics course; seldom offered

- **Networking**
  - 1652 Data Communications and Computer Networks: prerequisite: CS1550; offered once per year