Outline: October 2, 2008

1. Organization of operating systems
   a. Monolithic
   b. Kernel
   c. Process hierarchy
   d. Object oriented

2. User interface
   a. Kernel, essential utilities, optional utilities
   b. Command interpreter: JCL for batch, command language for interactive
   c. Program vs. environment
   d. Invoking programs; global vs. local environment
   e. Other features: interrupt, suspend, background, command completion

3. System kernel
   a. First level interrupt handler
   b. Dispatcher
   c. IPC primitives

4. Processes in the kernel
   a. Process control block
   b. Process state
   c. Process queues
   d. Dispatcher

5. Parallelism
   a. What and why?
   b. Precedence constraint
   c. Precedence graph
   d. Process flow graph

6. Basic constructs
   a. fork, join, quit
   b. parbegin, parend

7. Problem: bounded buffer without protection

8. Critical section problem
   a. What a critical section is
   b. Requirements to a solution