CS 470 - Operating Systems  
Spring 2007 – Exam 2 Review Sheet

Exam 2 will be on Wednesday, March 28. You may bring one 8.5in X 11in sheet of paper with notes on one side to the exam. You may print out the sheet, but it must be in a 9-point font or larger. E.g., please do not photoreduce or print 4 pages on a side. If you handwrite your notes, they may be as small as you like. You may handwrite notes in the margins of a printout.

The exam will consist of questions on the material in Chapters 6-9, except Sections 6.4 and 6.9, and covered in lectures through Monday, March 19 and assignments through Homework 6. The exam will consist of questions similar to the homework problems.

The following is a list of topics that will be emphasized, but it is in no way to be construed as an exclusive list.

1. Process synchronization, including mutual exclusion algorithms, semaphores, and monitors. You should understand these techniques and how to apply them to problems similar to bounded buffer, readers/writers, and dining philosophers. You may be asked to read programs and comment on their appropriateness as solutions based on the criteria of mutual exclusion, progress, and bounded wait.
2. Deadlock, including the necessary conditions and algorithms for prevention, avoidance, detection, and recovery. You should understand these terms and how to apply them. You should be able to discuss the costs and benefits provided by each approach.
3. Real (i.e., static allocation) memory management techniques. Contiguous and non-contiguous allocation strategies including paging and segmentation. Computation of effective memory access time.
4. Demand paging and virtual memory including the issues of page replacement algorithms, locality and working sets, and thrashing. Computation of effective memory access time.