

CS 470 - Operating Systems

Spring 2005 - Exam 2 Review Sheet

Reminders and announcements:

- Homework 8 is due at the beginning of class on Friday, April 7, since we will be going over the problems in class as part of the exam review.
- Friday, April 7, has been set aside as a review for the exam. We will go over homework and answer any questions you have about the material.
- Case study schedule is
 - 4/21 - DOS/Win 3.1, OS/2
 - 4/24 - Windows CE, Palm OS
 - 4/26 - CP/M, RTEMS
 - 4/28 - Multics, Mac OS X
 - 5/1 - Mosix

Outlines are due two weeks before presentation, report drafts are due one week before presentation.

Exam 2 will be on Monday, April 10. You may bring one 8.5in by 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 7–10, 11.1–11.7, 12.1–12.6, 14, and 15.1–15.5 and covered in lectures and assignments since Exam 1 through Wednesday, April 5. (Chapter 13 will not be on the exam.) The exam will consist of questions similar to the homework problems and the unassigned exercises in the textbook.

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

1. 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.
2. Real (i.e., static allocation) memory management techniques. Contiguous and non-contiguous allocation strategies including paging and segmentation.
3. Demand paging and virtual memory including the issues of page replacement algorithms, locality and working sets, and thrashing.
4. File subsystem. Programmer API, implementation structures, allocation strategies.
5. Disk scheduling, disk management, and disk structures.
6. Protection and security - general problems in OS protection and security, places of vulnerability and general methods of attack.