CS 33211 # Homework #1 **OS**

Due in class at 12:30pm on Monday 24 September 2007
typed answers preferred

1. How does the use of interrupts permit more efficient usage of the CPU during I/O than software polling?
   (*Note that I am not asking for a complete description of "interrupts" and "software polling".*)

2. What is the relationship between high-level language statements such as "printf( )", APIs, and system calls?
   (*Note that I am not asking for a complete description of "APIs" and "system calls".*)

3. In what ways has the definition of OS "kernel" changed over time?
   In what ways has the definition remained the same?
   (*Note that simply defining "OS kernel" for two or three different systems does not answer the questions asked.*)

4. In the UNIX process model, there are two "asleep" states and two "ready to run" states. How might it be useful to make this distinction?

5. What is the relationship between blocking send and receive operations and the five-state process model?

My homework assignments are intended to test your knowledge of some of the material presented in my lectures and in the textbook. On these assignments, I expect clear, well-focused answers to the questions asked, answers that balance brevity and detail. While brevity is desirable, one-sentence "answers", or lists of examples without further explanation, will probably not suffice. While detail and examples are desirable, two-page answers to each question are probably unnecessary.

Furthermore, unattributed "quoting" of sentences from the class textbook, from other textbooks, from the Internet, or from anywhere else will be considered plagiarism and is totally unacceptable (see the section on the course syllabus on Academic Dishonesty). I expect you to answer the question in **your own words** to convince me that you understand the material.