

## Lecture 1: Course Introduction

Outline of activity for the first hour.

1. Introduce the instructor.
2. Pass out attendance sheet for first day roster.
3. Pass out syllabus and discuss the overview of this course.
4. Announce the date for prerequisite evaluation exam.
5. Discuss about instructors and students expectation.
6. Survey the basic background relating to C programming and OS.
7. Pass out the first assignment before break.

Break:

Outline of activity for the second hour.

1. Relationship to CSCE230
2. Processors today
  - Driven by Moores law
    - Often thought of as a magic bullet
    - Does wonder to the execution time of compute intensive program
  - Advance architecture
    - VLIW
    - deep pipeline (32 stages!)
    - multiple issues (6 instructions per cycle; Itanium)
    - multiple cores (quad core Opteron in 2007)
  - High performance (3GHz or more)
3. Memory system today
  - Deep memory hierarchy (e.g. Pentium M)
    - L1 cache (3 cycles)
    - L2 cache (5 cycles)
    - Main memory (6 ns)
    - Disk (13 to 23 ms; read/write)
4. Main memory—abundant, fast, and cheap
  - Often creates an illusion that we will not run out for a while.
  - Large enough to reduce latency due to disk in most application
5. Disk—abundant, slow, cheap

6. What is an operating system?

- interface
- resource manager
- virtual machine

7. Evolution of operating systems