Midterm Exam Review Topics – CSC 139

For midterm exam, study chapters 1 – 5. Concentrate on the following (although, all topics should be studied). Also, expect the exam to be any format deemed necessary by the professor. That means, as engineers, expect the unexpected.

- Understand computer system operations (controllers, interrupts, memory, buffer, cache, etc.)
- Exceptions, system calls, interrupt
- Computer system architecture (symmetric, asymmetric)
- Operating System structures
- Operating System design models
- Processes
- PCB, context switching, registers, counters, quanta
- Memory layout
- Process state
- O/S execution modes (kernel, user)
- Process creation and communication
- Pipes (ordinary, named pipes)
- Threads and concurrency
- Multi-threading
- Concurrency/parallelism
- Multicore Programs
- Multiprogramming (advantages, disadvantages, challenges for programmers)
- Thread libraries
- Thread Cancellation
- Scheduler operations
- Amdahl's Law
- Scheduling algorithms (FCFS, SJF, SJF with pre-emption, round robin)
- Prediction of a CPU burst
- Dispatcher
- Multilevel feedback queue
- Multicore Processor Scheduling
- Affinity