Queens College - Department of Computer Science
CS340 – Operating Systems Principles
Lecturer: Dr. Simina Fluture

COURSE OUTLINE

- **Operating Systems**

  Introduction and History

- **Computer - System Structures**

  Starting a computer
  Interrupts
  Dual-Mode Operation
  Memory Protection

- **Operating - System Structures**

  Command Interpreter
  System Calls
  System Structure (Architecture)

- **Processes**

  PCB, Interrupts, Context Switch
  Process States, State Transitions, State Diagram
  Operations on Processes

- **Threads**

  The Thread Concept
  User / Kernel Threads
  Multithreaded Models
  Java Threads

- **CPU Scheduling**

  Schedulers
  Scheduling Algorithms

- **Process Synchronization**

  Principles of Concurrency
  Two Process Solution - Peterson Solution
  Synchronization Hardware
  Semaphores
  Classical Problems of Synchronization

- **Memory Management**

  Contiguous Allocation
  Paging
  Performance
  Segmentation with Paging (if there is enough time)

- **Virtual Memory**

  Demand Paging
  Page Replacement
  Performance
  Allocation of Frames, Thrashing
  Other Considerations