

# COMP 530 Introduction to OPERATING SYSTEMS

Fall 2017  
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## First Examination Review Sheet Key Concepts & Terms

October 2

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### Operating System Structures & Services

- Spooling
- Multiprocessor systems
- Buffering
- Off-line operation
- On-line operation
- Batch systems
- Interactive systems
- Real-Time systems
- Time-sharing systems
- Virtual machine emulation
- Distributed systems
- Context
- Logical concurrency
- Physical concurrency
- Multiprogramming
- Multiprocessing
- System call
- Dual-mode operation
- Direct memory access
- Programmed I/O
- Process
- Interrupt
- Trap
- Utilization
- Throughput
- CPU I/O overlap
- CPU bound
- I/O bound
- Linker
- Loader
- Channel processor
- Monolithic OS
- Layered OS
- Client/Server system
- Microkernel

### Processor Scheduling

- Process control block
- Ready queue
- Admission queue
- Suspended queue
- Waiting queue(s)
- Multiprogramming level
- Short-term scheduling
- Medium-term scheduling
- Long-term scheduling
- Response time
- Waiting time
- Turnaround time
- Context switch
- Processor state
- Memory state
- Yield
- Dispatch
- Preemption
- Preemptive scheduling
- Non-preemptive scheduling
- Cooperative multitasking
- First-Come-First-Served
- Shortest-Job-First
- Round-Robin
- Time quantum
- Optimal processor scheduling
- Processor Sharing
- Priority
- Aging
- Multilevel feedback queues
- Convoy effect
- Balanced system

## Processes & Process Coordination

- Process
- Thread
- Ready/running/wait states
- Shared memory
- Fork/Join
- Process state
- Busy-waiting
- Polling
- Event-driven operation
- Critical section
- Mutual exclusion
- Condition synchronization
- Deadlock
- Starvation
- Atomic operation
- Indivisible operation
- Semaphore
- Binary semaphore
- General semaphore
- Test-and-Set
- Interrupt enable/disable
- Producer/Consumer system
- Readers/Writers system
- Monitor
- Condition variable
- Urgent queue
- Hoare monitor
- Mesa monitor
- Synchronized class
- Priority inversion
- Message passing
- Implicit/Explicit naming
- Blocking/Non-Blocking synchronization
- Ports
- Mailboxes
- Broadcast
- Multicast
- Synchronous operation
- Asynchronous operation
- Buffered asynchronous operation
- Remote procedure call
- Marshalling
- Client
- Server
- Stub procedure