Operating Systems (CS3500) : Schedule

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August - November 2015

Class	Topics Covered
August 2015	
(1) 5/8/2015 (Wed)	***Introduction*** Why study OS? (Motivation) Its relationship to computer organization Course Structure Evolution of Operating Systems
(2) 6/8/2015 (Thu)	OS Evolution Operating Systems Overview will introduce processes basics, mm, synchronization, etc.
(3) 7/8/2015 (Fri)	***Overview*** Operating Systems Overview
(4) 11/8/2015 (Tue)	(Class on 14/8 rescheduled today) PC Hardware and Booting
(5) 12/8/2015 (Wed)	***Memory management*** Memory management in x86
(6) 13/8/2015 (Thu)	Initial setup of virtual memory in xv6 (with two 4MB pages)
(7) 19/8/2015 (Wed)	Reinitialized paging and segmentation
(8) 20/8/2015 (Thu)	per-cpu data & kalloc
(9) 21/8/2015 (Fri)	***Interrupts*** Interrupts. Hardware interrupts. PIC. Level and edge triggered interrupts
(10) 26/8/2015 (Wed)	APIC, Switching Stacks

(11) 27/8/2015 (Thu)	Interrupt Handlers (vectors.S, alltraps)
(12) 28/8/2015 (Fri)	Software Interrupts
September 2015	
(13) 2/9/2015 (Wed)	Software Interrupts & Exceptions
(14) 3/9/2015 (Thu)	xv6 code review, booting, multi-processor boot,
4/9/2015 (Fri)	Quiz 1 (covers booting, memory management and interrupts)
(15) 9/9/2015 (Wed)	Review of Quiz 1 solutions (script distribution)
(16) 10/9/2015 (Thu)	***Processes*** forking and exec
(17) 11/9/2015 (Fri)	zombies, orphans, demons, xv6 first process
(18) 16/9/2015 (Wed)	first process, context switching started
17/9/2015 (Thu)	Holiday (Ganesh Chaturthi)
(19) 23/9/2015 (Wed)	context switching
24/9/2015 (Thu)	Holiday (Bakrid)
(20) 25/9/2015 (Fri)	fork, wait, exit system calls
(21) 28/9/2015 (Mon)	ELF, exec system call internals
(22) 30/9/2015 (Wed)	Threads
October 2015	
(23) 1/10/2015 (Thu)	**Scheduling** threads and scheduling algorithms
2/10/2015 (Fri)	Gandhi Jayanthi
(24) 7/10/2015 (Wed)	scheduling algorithms (FCFS, SJF, SRTF, Round robin)
(25) 8/10/2015 (Thu)	scheduling(round robin, multilevel queues, feedback queues)
(26) 9/10/2015 (Fri)	Linux schedulers -- O(1) and O(n)
(27) 14/10/2015 (Wed)	Linux schedulers -- CFS

(28) 15/10/2015 (Thu)	**IPCs and Synchronization** IPCs, Critical Sections, Race Conditions
16/10/2015 (Fri)	Quiz (2) covers processes, context switching, process related system calls, scheduling,threads, scheduling algorithms
(29) 20/10/2015 (Tue)	Review of Quiz 2 solutions (script distribution)
(30) 21/10/2015 (Wed)	Critical Sections, Peterson's Solution, Bakery Algorithm
22/10/2015	Dussehra
(31) 27/10/2015 (Tue)	Test&Set, Spinlocks, Mutexes
(32) 28/10/2015 (Wed)	semaphores, producer-consumer, dining philosophers
(33) 29/10/2015 (Thu)	dining philosophers, deadlocks
(34) 30/10/2015 (Fri)	deadlocks, file systems
November 2015	
(35) 4/11/2015 (Wed)	**File systems** disks hardware, files, directories, etc.
(36) 5/11/2015 (Thu)	file system implementation aspects : allocation, VFS, operations
(37) 6/11/2015 (Fri)	free space, more on file allocations, recovery, xv6 FS
11/11/2015 (Wed)	Diwali
(38) 12/11/2015 (Thu)	**OS Security** DAC, Access control matrix, ACL, Capability based systems
(39) 13/11/2015 (Fri)	MAC, Bell-lapadula, BIBA, LSM, Covert Channels, Buffer overflows
26/11/2015 (Thu)	final exam (covers entire syllabus)