Concurrent Programming

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Books Used/Recommended: *Concurrent Programming, Principles and Practice*, by Gregory R. Andrews
IBSN: 0-8053-0086-4

Principles of Concurrent and Distributed Programming, by Morchedai Ben-Ari
ISBN: 032131283X

Lecture notes are normally distributed before each lecture.

Tentative Plan:

Week	Subject
P1	Motivation for concurrent programming; critical section problem
P2	Semaphores: mutual exclusion, signaling; threads in java
P3	Producers and consumers: bounded buffers; the technique of passing the baton
P4	Selective mutual exclusion; Readers and Writers; The Dining Philosophers
P5	Sample exam questions - lab
P6	**Exam**
P7	Monitors – relation to semaphores notation, signaling disciplines
P8	Monitors – Sleeping Barber Problem – monitors in java – pthreads library
P9	**NO CLASS**
P10	Lab
P11	Asynchronous message passing; Clients and servers – conversational continuity
P12	Heartbeat Algorithms – network topology
P13	Broadcast Algorithms – distributed semaphores / logical clocks and event ordering
P14	Class on WEDNESDAY - Token passing algorithms
P15	Remote Method Invocation
P16	Remote Method Invocation
P17	Exam - B30.04

Grading – 2 Exams during the semester, at least 3 lab programs to turn in. There is no final exam. The grade will be computed as follows:

$$\frac{\frac{\sum exams_n}{n} + \frac{\sum labs_m}{m}}{2}$$

More about the exams during the semester.