Concurrent Programming - Fall

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C10.08
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Office hours : Wednesday 13:00 – 17:00, drop me an email for an appointment.

Recommended Books :

The JR Programming Language, by Ronald Olsson and Aaron Keen, ISBN: 1-4020-8085-9

Concurrent Programming, Principles and Practice, by Gregory R. Andrews ISBN: 0-8053-0086-4

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

Lecture notes are normally given before each lecture.

Tentative Plan for Concurrent Programming 1, Fall semester 2019/2020:

Week	**Subject**
A1	Motivation for concurrent programming; critical section problem; introduction to JR
A2	Techniques for avoiding interference; Making sure your system is set up
A3	Semaphores: mutual exclusion; Producers and Consumers; first lab description
A4	Dining Philosophers; Barrier synchronisation: the technique of passing the baton
A5	Producers and consumers: split binary semaphores; bounded buffers
A6	Threads and Semaphores in Java
A7	Selective mutual exclusion: Readers and Writers
A8	Sample Exam Questions - Lab
A9	Exam
A10	Monitors – notation, Signaling disciplines – preprocessor with JR
A11	Synchronising techniques – priority; Implementing monitors with semaphores
A12	Sleeping Barber Problem - Monitors & Java: pre 1.5 versions
A13	Lab
A14	Monitors – The pthread library
A15	Lab
A16	Exam

Grading – 2 Exams during the semester, at least 4 lab programs to turn in. In addition, there is an oral final exam during the first full week of February. The grade will be computed as follows:

$$\frac{exam_{oral} + \frac{\frac{exam_1 + exam_2}{2} + \frac{\sum^{n} lab}{n}}{2}}{2}$$