**CIS 525 Software Development of Parallel and Distributed Systems Fall 2008**

**Lecture 21, November 13, 2008**

1. **Stochastic Petri nets (SPNs):**
2. Definitions – PNs with timed transitions; time values have specific probability distribution function
3. Using SPNs for performance evaluation - PN modeling and simulation
4. Performance evaluation of a file transfer system over a network using SPN simulation – a case study with average response time and utilization as performance measures:

* Modeling client-server architecture with Petri nets (client, server, network components)
* Scenarios of client-server architecture
* Client, server, network utilizations and system’s response time
* Using place invariants to prove properties of the client-server architectures
* Results of experiments and their comparison with measured data
* Further refinements of the client-server architecture PN model.

1. **Project #2 – CP net Modeling of a Conference Support System -** handout and explanation**.**