

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

### Lecture 15: Tuesday, October 21, 2008

Midterm Take Home Exam

### Lecture 16: Thursday, October 23, 2008

#### **1. Concepts of Bi-similarity in Petri nets (chapter 10.2; pp. 143-146):**

- a) Strong bi-similarity (nets without abstraction) - definition
- b) Interleaving bi-similarity vs. Step bi-similarity – definition and related examples
- c) Branching bi-similarity –definition and related examples
- d) Example of the protocol for customer service in supermarket.

#### **2. Spectrum of modeling alternatives ranging from P/T nets to CP nets:**

- a) Example of the resource allocation problem
- b) Several versions of the resource allocation problem with P/T nets and CP nets
- c) Formation of functions that control enabling transitions and distribution of resources.

#### **3. Reductions in Petri nets:**

- a). six rules of reduction
- b). example showing application of reduction rules.

#### **4. Characterization of the Free-choice Nets:**

- a) Characterization of state machines
- b) Characterization of the marked graphs
- c) Characterization of Free-choice nets
- d) Examples of nets in support of these classes of models.