

### **Lecture 3 – September 9, 2008**

1. Reachability and Coverability graphs for Petri nets, i.e. how to know global behavior of the system – algorithms with examples.
2. Three independent properties of Petri nets – boundedness, liveness, and reversibility – handout with definitions and with illustrating examples.
3. Vicinity preserving Petri net morphisms of Petri nets, i.e. how to control abstraction and refinement – with example of renting agency.
4. Conflict and concurrency as dual concepts.
5. Subnet, dual net, and contact-free nets.

### **Lecture 4 – September 11, 2008**

1. Subnet, dual net, and contact-free nets.
2. Composition, abstraction, refinement in Petri nets – explained by example of two racing cars from the textbook.
3. Introduction to Colored Petri nets (CPNs) – exercises explaining the concept to “enable a transition in CPNs”.
4. Hardware and Software implementations of Petri nets directly from the model – by example of two concurrent wagons and their control system.