DES Course Summary

- Discrete Math: Prove logical statements by equivalences, implications, and contradictions. Applied to propositional logic, predicate logic and set expressions.
- Automata, formal languages and Petri nets: Transformations between the different models including the important synchronization operator.
- Specification of DESs: Ch 4 shows typical examples of modeling features for DESs.
- Implementation: See the end of Ch 1.

DES Course Summary

- Verification and synthesis: Nonblocking and controllability.
- Automata and Petri nets with shared variables, timed and hybrid automata.
- Temporal logic verified by μ-calculus.
- Markov processes, queuing theory, Markov decision processes.
- Reinforcement learning: Dynamic programming and Q-learning.