About Exam

SE 3BB4

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- The exam is on Friday, Dec 12, 2025, at 7:30pm-9:00pm, in-person.
- The exam will last 2.5 hours and is worth 50% of total grade.
- One double-sided single page of your own notes will be allowed. It can be either printed (using any font) or handwritten.
- The exam questions will be similar to the assignment questions, but simpler and less labour consuming.
- Understanding the posted solutions to assignments is recommended.

- The exam cover Lecture Notes 1-17, parts of Textbook Chapters 1-10, 12, and parts of Chapter 3 of the logic book posted on the web.
- The exam will require not only the knowledge of FSPs (and appropriate LTSs) and its programming representations, but also some rudimentary knowledge of Petri Nets, Semaphores and Model Checking (as in Lecture Notes).

Topics

- Basic Algebra of Finite State Processes (FSP)
- Labeled Transition Systems
- Elementary Petri Nets
- Concurrent Composition of FSP and Elementary Nets
- Bisimulation
- Labeling, Hiding in FSP
- Structure Diagrams
- Shared Object and Mutual Exclusion
- Monitors, Condition Synchronization and Buffers
- Semaphores. Limits and Extensions (in FSP and in general)

Topics

- Deadlock and its prevention
- Place/Transition nets (including invariants)
- Coloured Petri Nets
- Safety (in FSP and in general)
- Liveness (in FSP and in general)
- Model Based Design
- Message Passing
- Temporal Logic: LTL and CTL
- Model Checking
- Dynamic Systems
- Timed Systems: FSP Model and Timed Petri Nets