Massachusetts Institute of Technology Handout 4
6.897: Modeling and Analyzing Really Complicated Systems, Using State Machines
Profs. Nancy Lynch, Daniel Jackson, and Michael Ernst February 6, 2001

6.897 Schedule: Version 3

Lecture 1 Tuesday, February 6
Lynch
Overview; State machines, invariants, and levels of abstraction

Lecture 2 Thursday, February 8
Lynch
Abstraction functions and abstraction relations
Other views of state machines, invariants, and abstraction: Lamport's TLA

Lecture 3 Tuesday, February 13
Lynch
Manna and Pnueli's temporal logic
Statecharts
Due: Hand in choice of case study area

Lecture 4 Thursday, February 15
Natasha Neogi
Lynch
Statecharts, continued
More on abstraction relations

Lecture 5 Thursday, February 22
Lynch
SPIN team: John, JK, Ilya, Ken
Model-checking overview
SPIN model-checker

Lecture 6 Tuesday, February 27
SPIN team: John, JK, Ilya, Ken
Lynch
TLC team: Mandana, Rui, Stan
SPIN, cont'd
SPIN's model-checking algorithms
TLC model-checker

Lecture 7 Thursday, March 1
TLC team: Mandana, Rui, Stan
Ernst
TLC, cont'd
Invariant discovery

Lecture 8 Tuesday, March 6
Ernst
Garland
Invariant discovery, Daikon
Theorem proving

Lecture 9 Thursday, March 8
Garland
Theorem proving, LP

Lecture 10 Tuesday, March 13
Lynch
IOA

Lecture 11 Thursday, March 15
Garland
Theorem proving, LP, IOA

Lecture 12 Tuesday, March 20
Lynch, Attie
Liveness, temporal logic

Lecture 13 Thursday, March 22
Lynch
Composition

Lecture 14 Tuesday, April 3
Lynch
Composition

Lecture 15 Thursday, April 5
Attie
Dynamic systems

Lecture 16 Tuesday, April 10
Lynch
Timed systems

Lecture 17 Thursday, April 12
Lynch
Timed systems

Lecture 18 Thursday, April 19
Jackson
Relational models

Lecture 19 Tuesday, April 24
Alur
Timed systems, Uppaal

Lecture 20 Thursday, April 26
Lynch
Timed systems

Lecture 21 Tuesday, May 1
Lynch
Hybrid systems

Lecture 22 Thursday, May 3
Lynch
Hybrid systems

Lecture 23 Tuesday, May 8
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Hytech

Lecture 24 Thursday, May 10
Lynch
Hybrid systems

Lecture 25 Tuesday, May 15
Lynch
Probabilistic systems

Lecture 26 Thursday, May 17
Lynch
Probabilistic systems **Due:** Hand in final "portfolio" of case study examples